OPERATORS INSTRUCTIONS

WHITE®
SEWING MACHINE
MODEL
734

WHITE SEWING MACHINE

Record in space provided below the Serial No. and Model No. of this appliance.
The Serial No. is located Rear of arm.
The Model No. is located Rear of arm.
Serial No._____
Model No. 734

Retain these numbers for future reference.

You are now the owner of a new zigzag sewing machine, the most versatile type of its kind you can possess.

Buttonholes, monogramming, stretch stitching, overcasting and creative embroidery are done with ease and speed.

To aid you in obtaining the greatest performance from your new WHITE, this book on its care and use has been written for you. Read the instructions carefully, as a thorough understanding of your machine will reward you with many hours of trouble free, creative sewing.

WHITE SEWING MACHINE COMPANY
Cleveland, Ohio 44111

WHITE CONSOLIDATED INDUSTRIES, LTD.
Scarborough, Ontario, Canada

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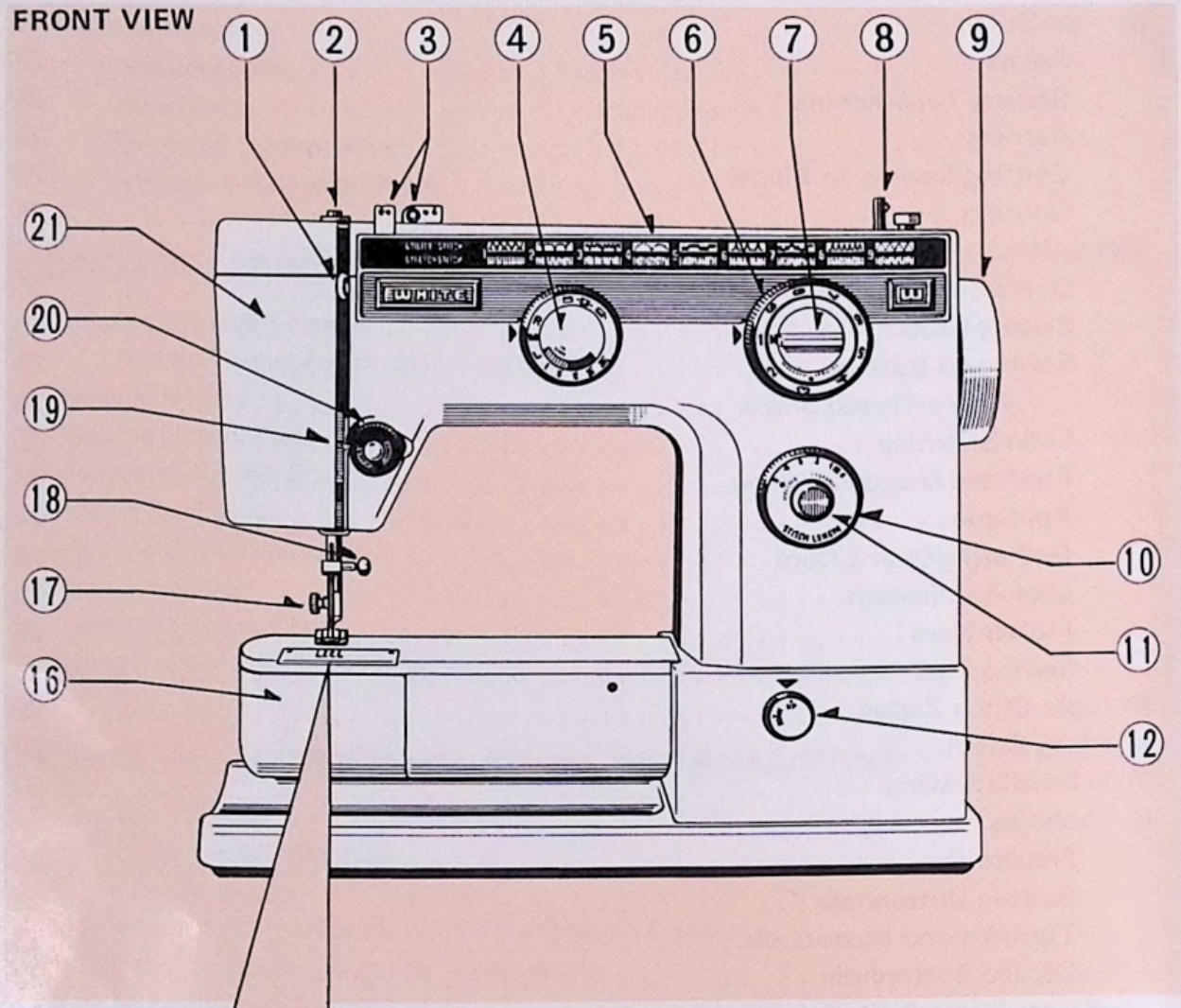
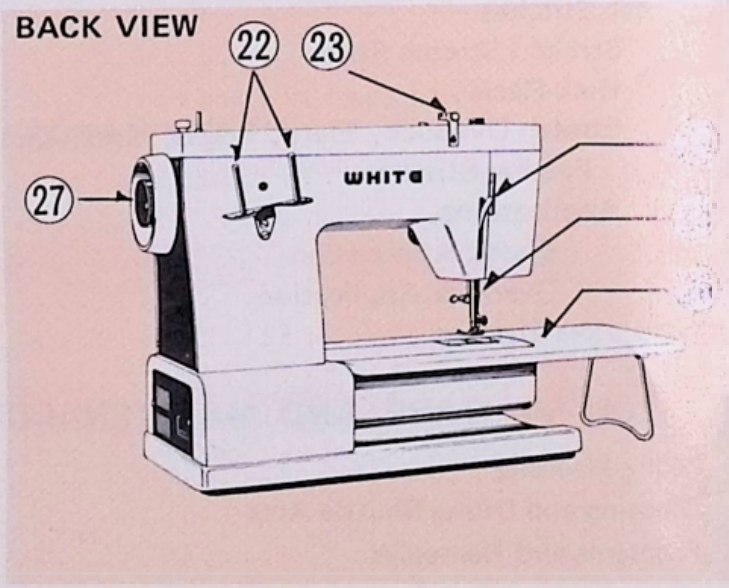
PARTS IDENTIFICATION

PRINCIPLE PARTS





1. Take-Up	Always at its highest position when beginning or ending sewing.
2. Pressure Control	For regulating the pressure on fabric.
3. Top Thread Guides	For leading thread to tension control for sewing.
4. Needle Position/ Stitch Width/Button-hole Control	For selecting needle position, setting stitch width and button-hole steps.
5. Stitch Pattern Selection Table	For reference of selected stitch pattern.
6. Stitch Pattern Selector	For selecting the stitch pattern.
7. Stretch Stitch Control	For changing ordinary stitch to triple reinforced stitch (stretch stitch).
8. Bobbin Winder	For winding thread on bobbin.
9. Hand Wheel	For the control of the up and down movement of the needle.
10. Stitch Length Control	For selecting stitch length between no feeding and about 6 stitches per inch.
11. Reverse Button	For easy backtacking to lock thread ends by pushing the button.
12. Feed Dog Height Control	For regulating feed dog height for various materials and types of sewing.
13. Needle Plate	With guide lines for sewing accuracy.
14. Presser Foot	For holding fabric when sewing.
15. Feed Dog	Diamond point to move fabric accurately.
16. Access Cover	For opening an access to bobbin and bobbin case.
17. Thumb Screw	For tightening presser foot in place on presser bar.
18. Needle Clamp	For holding needle in place in the slot of needle bar.
19. Check Spring	For automatic precise flow of upper thread.
20. Tension Dial	For regulating the amount of tension on upper thread.
21. Face Plate	Hinge type for replacement of light bulb and oiling.
22. Spool Pins	For holding spools, preventing over-spin of spools.
23. Bobbin Winder Tension Disc	For providing proper tension on thread when bobbin winding.
24. Presser Foot Lever	For lifting or lowering presser bar and presser foot.
25. Thread Cutter	For cutting both upper and lower threads after sewing.
26. Extension Plate	For changing to flat sewing surface.
27. Clutch-nut	For stopping movement of the needle bar in order to wind bobbin.

ACCESSORIES

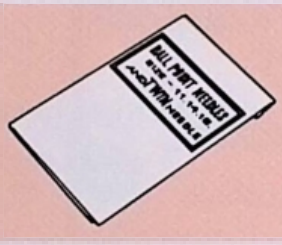
Your new White sewing machine comes equipped with the following set of accessories to make your sewing easier.

Three Metal Bobbins

The bobbins are made of metal and hold about 80 yards of thread.

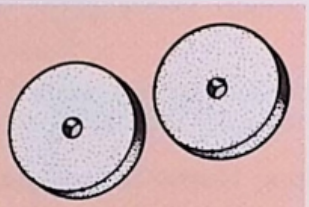
Needles

All-purpose needles sizes 11, 14 and 16 are included. Twin needle is also provided.



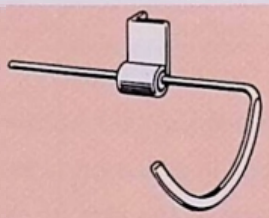
Two Felt Washers

Place the felt washers under the spools for best stitching results.



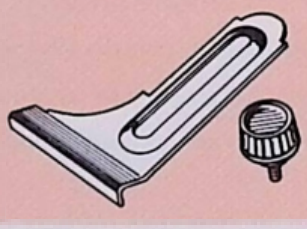
Quilting Guide

helps make parallel rows of stitching.



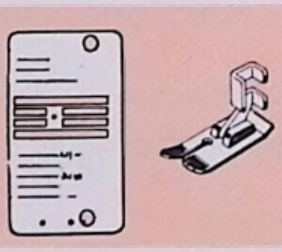
Cloth Guide and Screw

aids in sewing straight seams.



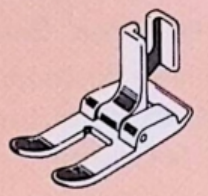
Straight Stitch Foot and Plate

for straight sewing on sheer and very light weight materials where extra support is needed.



Buttonhole Foot

Use for buttonholing.

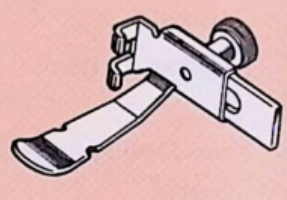


Button Sewing Foot

hold button in place for stitching.

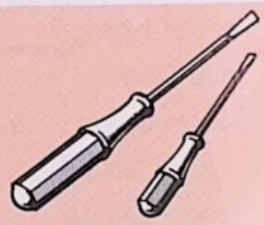
Cording and Zipper Foot

for stitching very close to the edge of a cord or zipper.



Screw Drivers

Small one for use on bobbin tension. Large one for use on thumb screw, needle clamp screw, etc.

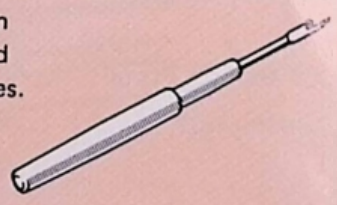


Tubed Oiler

for use in oiling the machine. See page 38.

Seam Ripper

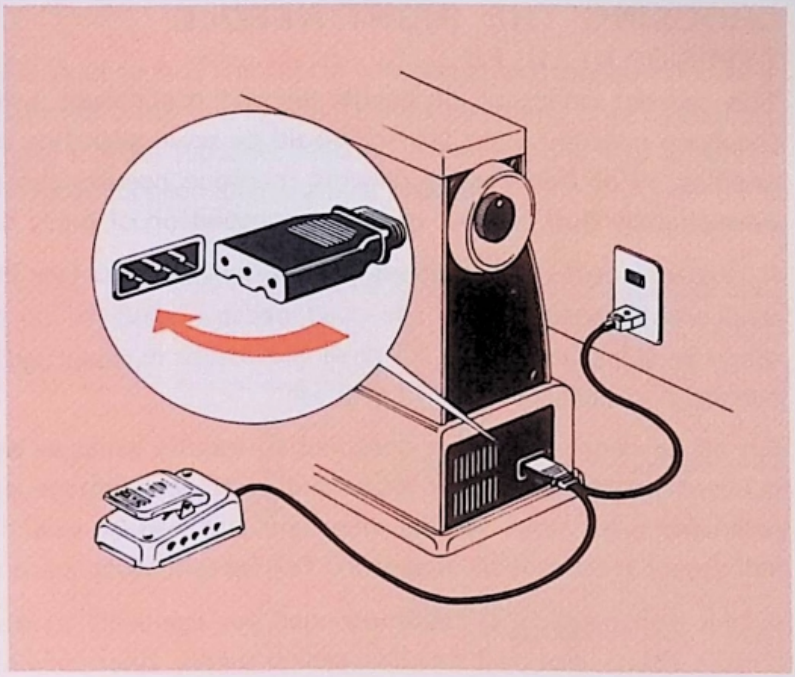
for cutting open buttonholes and removing stitches.



ELECTRICAL CONNECTIONS

Insert the plug with the indentations on the underside into the socket on the right side of the machine. The plug will only go in one way. Place the foot control in such a position that your foot rests comfortably on it. Insert the plug into a wall outlet, 110–120V.

When not in use, keep the plug disconnected from machine.

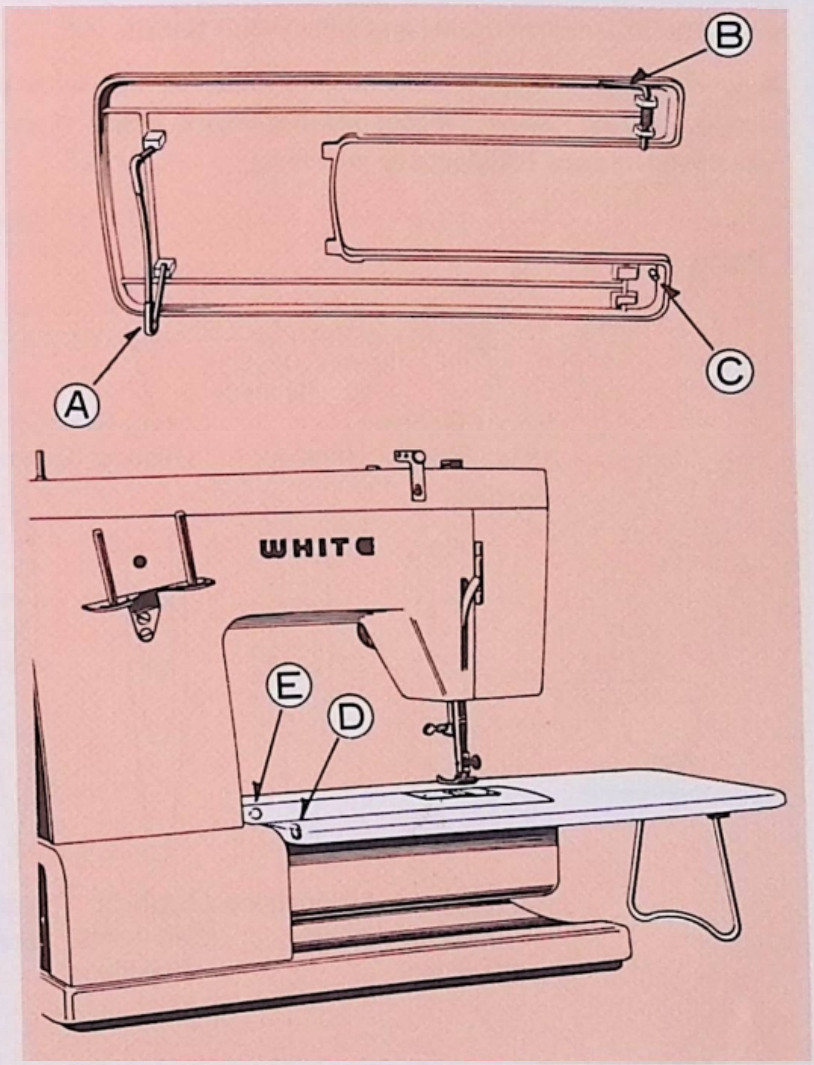


ATTACHING EXTENSION PLATE

To change to flat sewing surface, place extension plate as follows.

1. Turn down the extension plate support legs (A) with the left hand.
2. Pull the lock lever (B) and turn it up to the left.
3. Tilt the extension plate down to enter the pin (C) in the corresponding hole (D) at the rear side free arm.
4. Turn the lever (B) down to the right to set the pin into front hole (E).

Note: In case of sewing tubular areas, detach the extension plate for free arm sewing.



CHOOSING THE RIGHT NEEDLE

TYPES OF NEEDLES

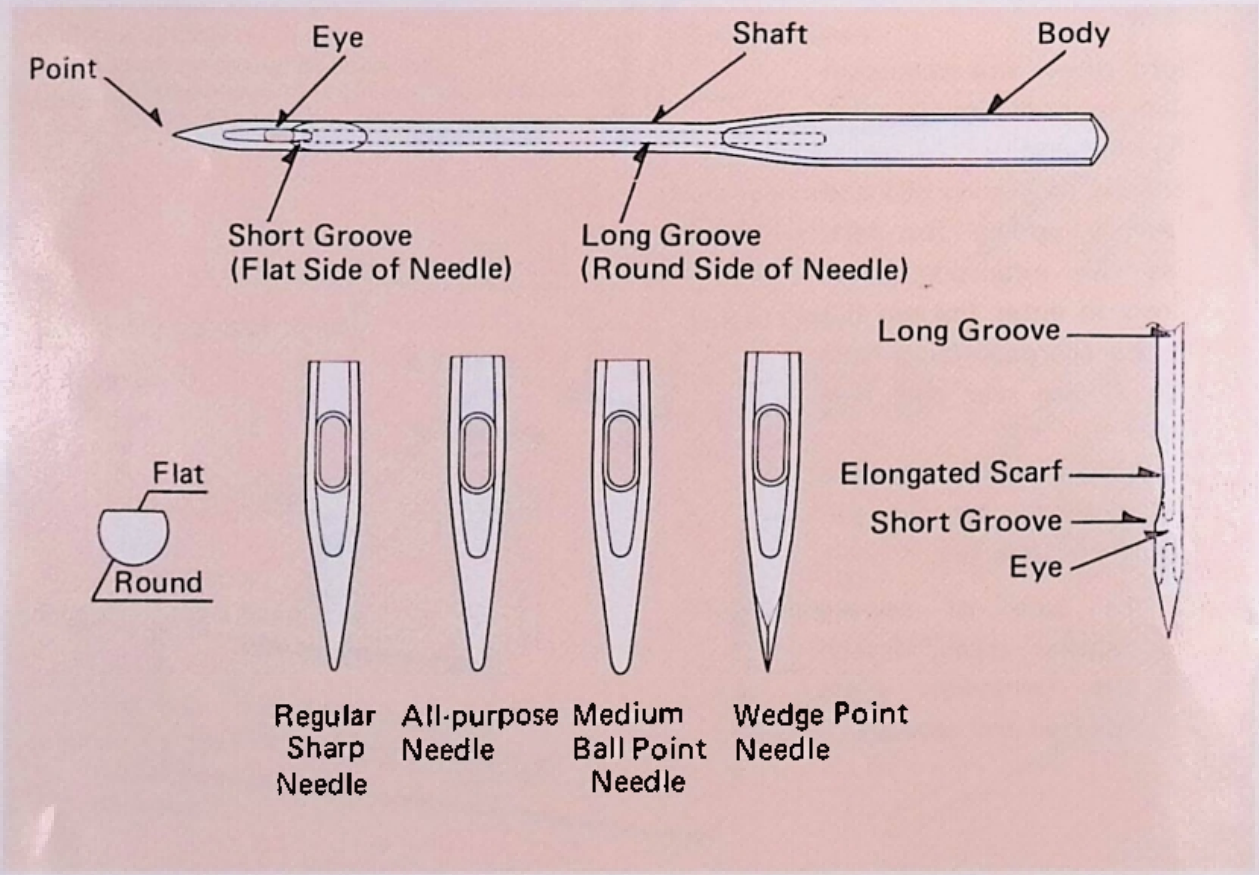
The correct selection of needle to suit the thread and fabric being sewn gives the best stitching results. Fine fabric should be sewn with fine needles, heavier fabrics with heavier needles. For best results, sewing machine needles should be replaced when they become even slightly dull or bent or at the completion of every other garment.

A regular needle is suggested for use with woven fabrics. Needles style 15 x 1, (European equivalent System 705) are used on the majority of household sewing machine. They range in sizes from 8 to 20 with the lower number indicating the finer needle. The most commonly used sizes are 11 and 14.

An all purpose needle is designed to handle knits as well as woven fabrics. It eliminates skipped stitches and the slight ball will not damage delicate fabrics. This is the needle provided with your sewing machine and will be used for most of your sewing. A larger ball point may still be necessary for certain knits, such as bathing suit fabric or power net.

A ball point needle is recommended for use with tricots, jerseys, lingerie and power nets. Unlike sharp, pointed needles, which pierce fibers of knit fabrics, destroying elasticity, the ball point slips between fibers, preventing damage to fabric and skipped stitches. These are available in fine, medium, and heavy ball points.

A wedge point needle is recommended for use with leather and leather-look vinyls. A wedge cutting point pierces leather more easily than ordinary sewing machine needles, resulting in more satisfactory stitching.



NEEDLE, THREAD, FABRIC & STITCHING GUIDE

The correct selection of needle and thread to suit the fabric will result in more satisfactory stitching. Fine fabrics should be stitched with fine needles, fine thread and short stitches. For best results on heavier fabrics, use coarser needles, heavier threads and longer stitches. Replace the machine needle when it becomes even slightly dull or bent.

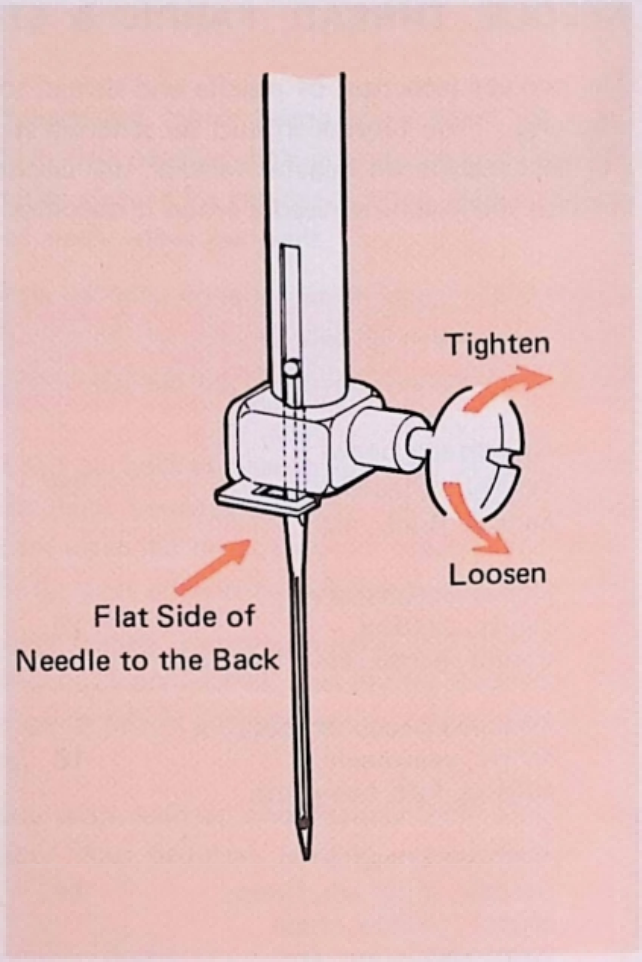
Fabric	Needle No.	Machine Stitching Per Inch	Mercerized Thread	Synthetic Thread
Extremely heavy tarpaulin, sacking, canvas, duck, etc.	18	6 to 8	Heavy Duty	
Heavy upholstery fabric, ticking, denim, leatherette.	18	8 to 10	Heavy Duty	
Medium heavy drapery fabric, velveteen, suiting, felt, terry, etc.	16	10 to 12	Heavy Duty	
Medium broadcloth, percale, gingham, linen, chintz, taffeta, sheer wool, shantung, etc.	14	12 to 14	50	○
Sheer voile, lawn, dimity, crepe, handkerchief linen, Plastic film, etc.	11	14 to 16 (plastic film) 8 to 10	50	○
Very sheer chiffon, batiste, lace, organdy, nylon net, marquisette, etc.	9	16 to 20	60	○

CHANGING NEEDLE

Always change the needle after every other garment especially when sewing on polyester and nylon fabrics which dull needles much faster. When needles are dull or bent, they damage both your fabric and the machine. A general rule when placing sewing machine needles is that the flat side of the needle is placed to the back of the machine, when the bobbin is put in from the front. If the needle is inserted incorrectly, the stitches will not form.

To change the needle:

1. Raise the needle bar to its highest position by turning the hand wheel toward you.
2. Loosen needle clamp to remove the needle.
3. Place needle (flat side to the back and long groove to the front) in the needle clamp and push it upward as far as it will go, tighten needle clamp.
4. After changing the needle, make one complete turn of the hand wheel by hand to be sure the needle is clearing the needle plate.



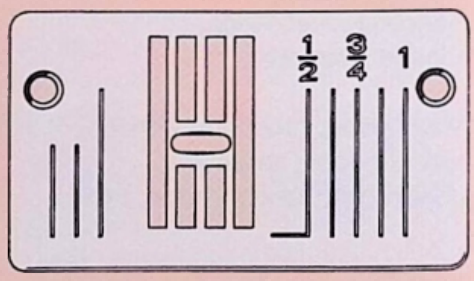
CHANGING NEEDLE PLATE

Although an all-purpose utility needle plate is fixed on your machine, for straight sewing on fine fabric or soft or very stretchy fabric, you may want to use the straight stitch needle plate together with the straight stitch foot, both of which are included in your accessory box.

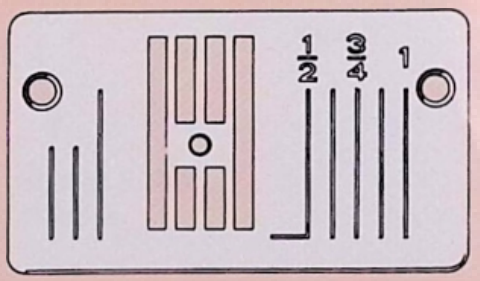
To change the needle plate, remove the two screws holding the plate in place. Lift the needle plate and replace.

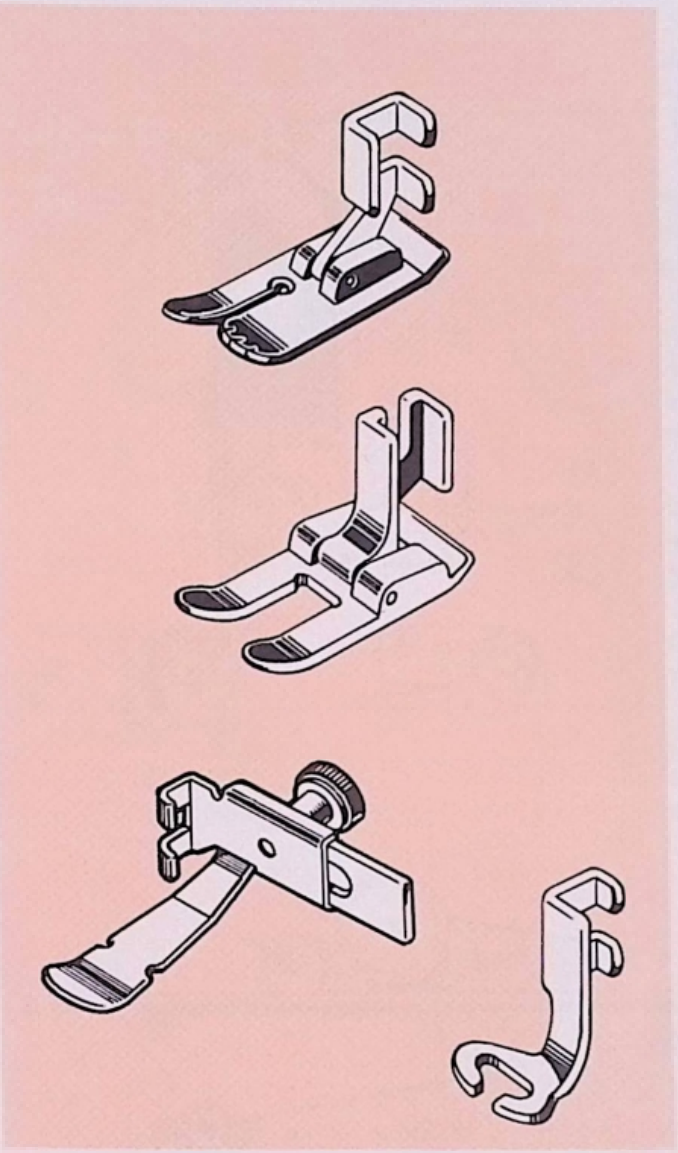
The needle plate is removed for cleaning the lint which may pile up between needle plate and feed dogs.

Utility Needle Plate



Straight Stitch Needle Plate





SELECTION OF PRESSER FOOT

For most ordinary sewing the original all-purpose foot can be used. However, it is recommended to use the following special feet in your accessory box whenever you want a better stitching result.

Straight Stitch Foot

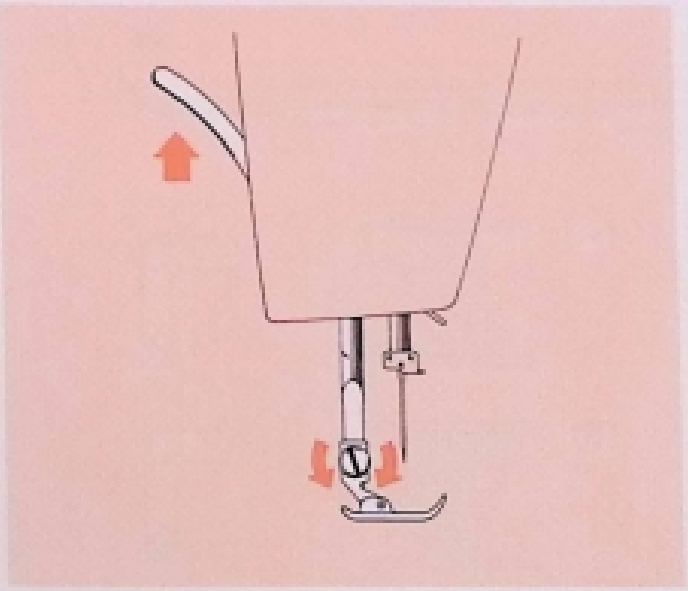
This has only a narrow hole to accommodate only straight stitching. It may be used on sheer or soft fabrics for more control. When using this foot, the Stitch Width Control should be "M" to avoid hitting the foot and breaking the needle.

Buttonhole Foot

This foot has a groove underneath, to allow the narrow satin stitch or buttonhole to form evenly. However, if skip stitches occur on sheer fabrics with this foot, it may be necessary to use thin paper underneath.

Cording & Zipper Foot, and Button Foot

Use for sewing very close to the edge of a cord or zipper, and sewing on buttons respectively.



CHANGING PRESSER FOOT

Use the large screwdriver to loosen thumb screw. Turn the screw backward until the foot becomes loose. Then, lift up on presser foot lever until it is in its highest position in order to remove the foot. Replace with desired foot and tighten thumb screw securely.

WINDING BOBBIN

Disengage the hand wheel (1) from the stitching mechanism by turning the clutch nut (2) toward you or counter-clockwise.

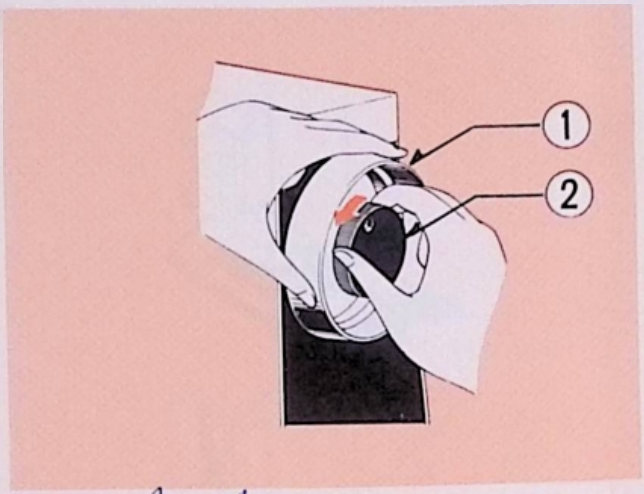
Place a spool of thread on one of the spool pins and lead thread through the rear Top Thread Guide (3) after winding around Bobbin Winder Tension Disc.

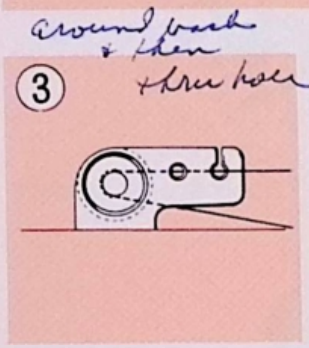
Run the end of thread through a hole in the bobbin edge and place bobbin on spindle of bobbin winder (4) fitting the notch on bobbin over small spring on spindle.

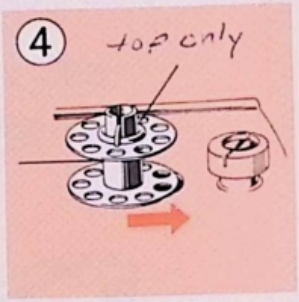
Push bobbin winder to the right, and hold the thread end loosely then start machine slowly, and bobbin will stop turning when bobbin is full.

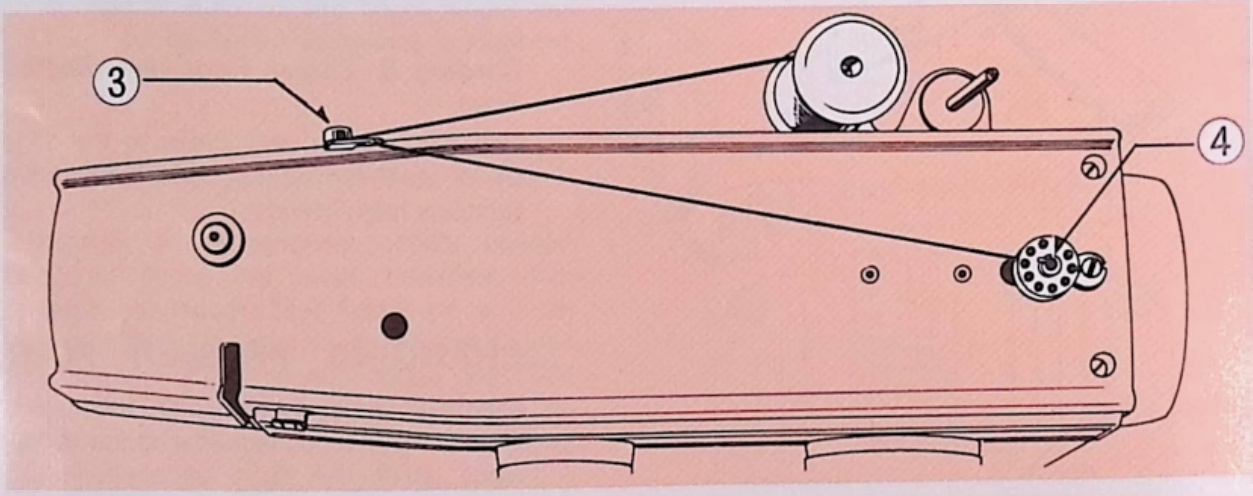
Cut thread and push bobbin winder to the left. Remove bobbin from bobbin winder.

Turn clutch nut away from you until sewing mechanism is again engaged so that needle moves when you turn the hand wheel.





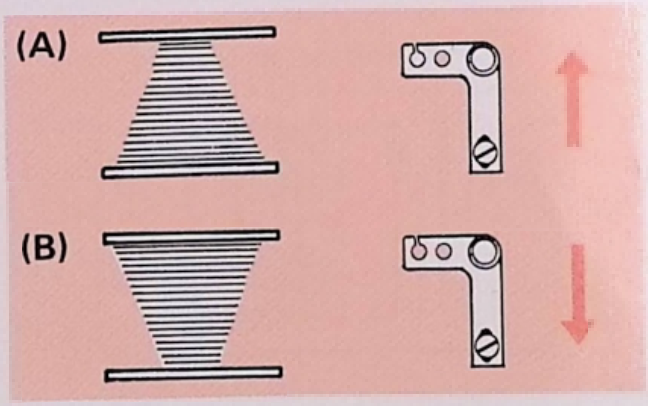




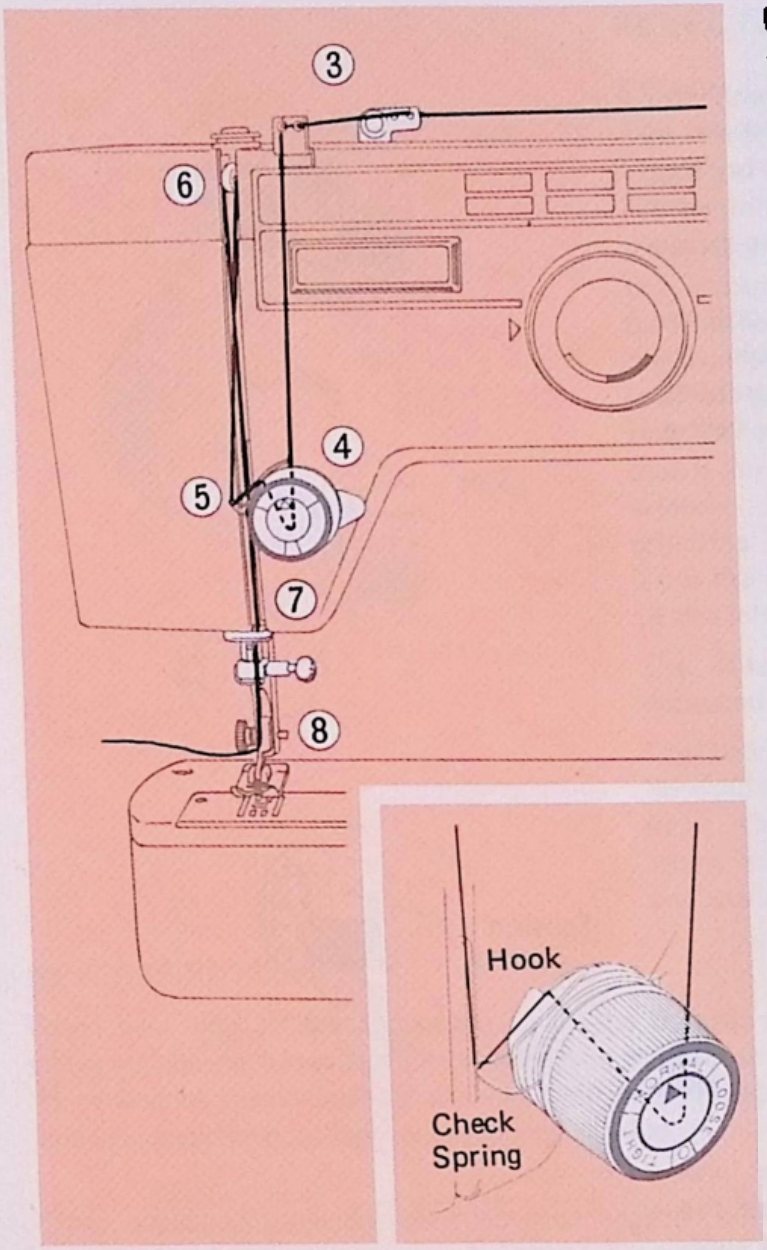
ADJUSTING BOBBIN WINDER

It may be necessary to adjust of rear top thread guide when thread winds unevenly on bobbin.

If the thread winds unevenly on bobbin as shown (A), loosen set screw of rear top thread guide and move the thread guide up slightly. If the thread winds as shown (B), move the thread guide down slightly.

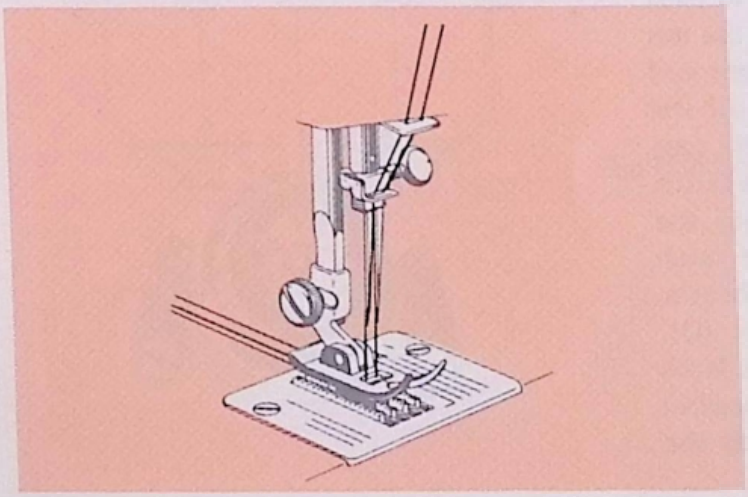


(3) thread (rear) w/o slot
over second hole into slot



UPPER THREADING

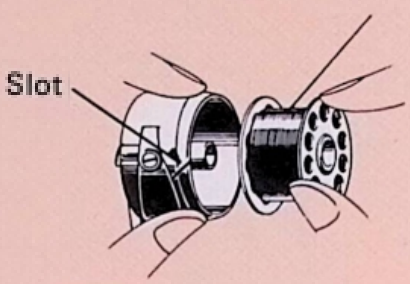
1. Turn the hand wheel toward you to raise the take-up lever to its highest position.
2. Place a spool of thread on the spool pin.
3. Lead the thread through the top thread guides.
4. Down and between the tension discs, from right to left.
5. Draw the thread up through the check-spring and with a slight tug into the hook.
6. Up and through the eye of take-up lever from right to left.
7. Lead thread down through the thread guide at the bottom of the threading slot, then, through the thread guide on needle clamp.
8. Thread the needle FROM FRONT TO BACK, drawing it through about 3 or 4 inches. Hold the end of the upper thread loosely and turn the hand wheel toward you until the needle goes all the way down and comes back up. A thread loop will form over the upper thread which then can be pulled out straight. Place both thread ends under presser foot and draw toward the back of the machine, leaving both threads three or four inches long.

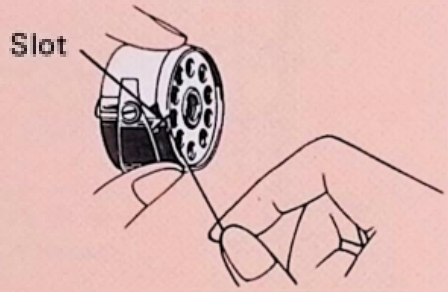


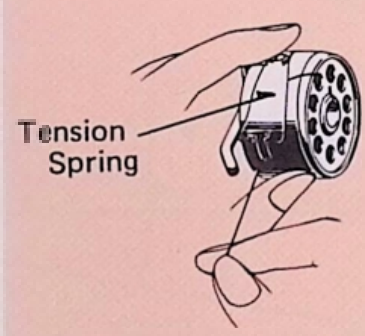
In case of twin needle sewing, place two spools of thread, matching or contrasting in color, one on each spool pin, lead both threads through top thread guides, bring threads down and pass one thread between the back discs and the other between the front discs, then treat both thread as one until threading each thread through each needle eye of twin needle.

THREADING BOBBIN CASE

1. Hold bobbin case between thumb and forefinger of left hand, so that the slot in the edge of the bobbin case is on top. Take the bobbin between thumb and forefinger of right hand so that the thread on top leads from left to right.
2. Insert bobbin into bobbin case, pull the thread into the slot of the bobbin case and draw it under tension spring and into the fork-shaped opening of the spring.

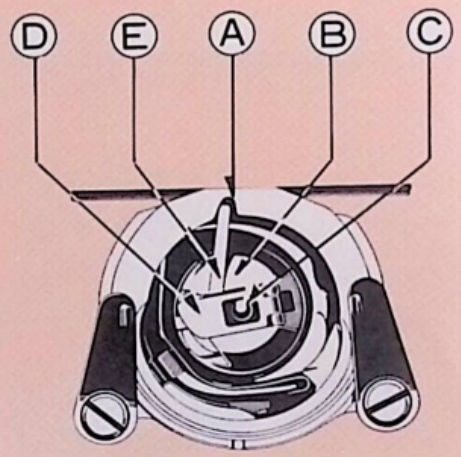


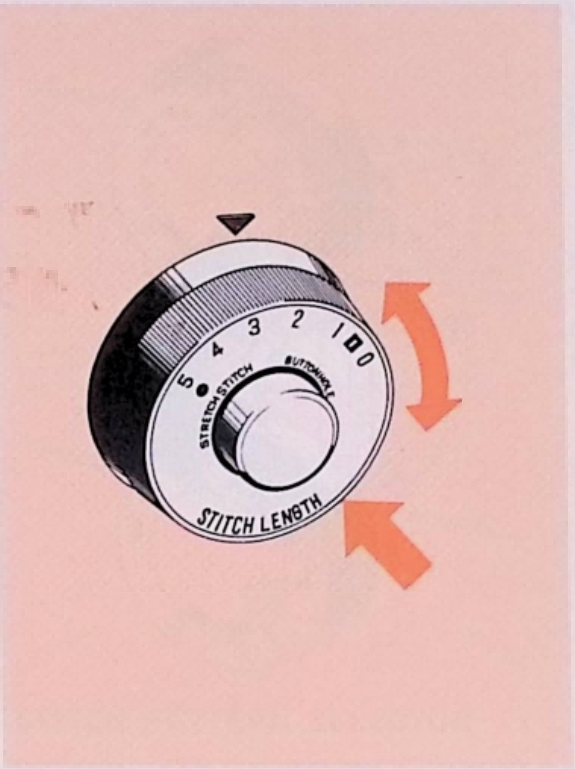




PLACING BOBBIN CASE IN SHUTTLE

Raise needle bar to its highest position, and swing open the access cover down. Hold the bobbin case latch (D) between the thumb and forefinger of the left hand, with at least three inches of thread running from the top of the bobbin case to the right. Insert and center the bobbin case on the stud of the shuttle body (C). Be sure the bobbin case finger (E), is opposite the shuttle race notch (A). Press the bobbin case (B) into the shuttle as far as possible until the latch catches on the center post of the shuttle. Then release the bobbin case latch (D). Press the bobbin case again after the latch has been released to make sure the bobbin case is locked securely in place. Close the access cover.





SELECTION OF STITCH:

STITCH LENGTH CONTROL

The stitch length control controls the forward feeding of the fabric in ordinary sewing.

At 0, the fabric does not feed at all. With the control around the symbol for buttonhole, the shortest stitch is available. At 5 is the longest – about 6 stitches per inch on ordinary fabrics – but the control may be set at any desired spot between 0 and 5 for a variety of length, except when stretch stitching (triple back-and-forth stitching), the control should be always at 5. Turn the control to the right to lengthen and to the left to shorten the stitch.

The stitch length number you choose is indicated by the pointer above the control.

The stitch length in stretch stitching (triple reinforced stitching) is fixed about 3/64 inch. On most kinds of fabrics the stretch stitch control is at "STRETCH STITCH" and the stitch length control is at "5".

REVERSE BUTTON

When you wish to sew backward to tie the threads at the beginning or end of a seam in ordinary sewing, press the Reverse Button in as far as it will go, so that your machine sews in reverse at approximately the same stitch length as forward stitch length. The machine will sew backward as long as the button is held in.

Cross reference table between numeral on the control and number of actual stitches per inch

Numeral on the control	0	1	2	3	4	5
Number of stitches per inch (approx.)	No Feeding	30	25	15	8	6

NEEDLE POSITION/STITCH WIDTH/ BUTTONHOLE CONTROL

This dial is used for changing needle position, stitch width at Left needle position, and when making four-step buttonhole.

- **Needle Position:**

Three different needle position, L – left, M – middle and R – right can be selected. At right and middle needle positions, only straight sewing is available. For zigzag and other pattern sewings, set needle position at L – left needle position.

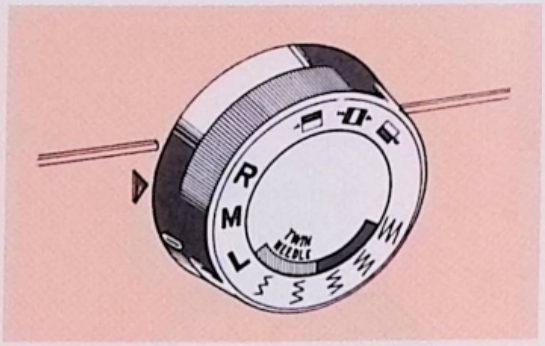
- **Stitch Width at Left Needle Position:**

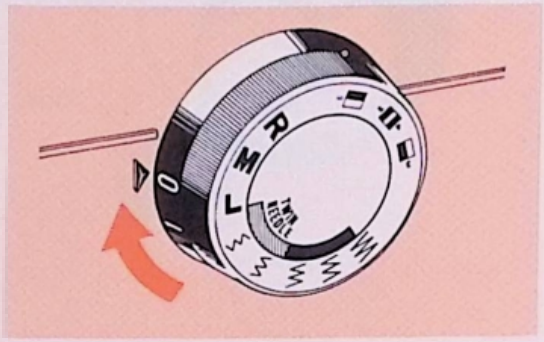
At (L) the needle does not swing, therefore, a straight line of sewing results no matter which stitch is selected. With the dial at 1 or narrow zigzag mark the needle takes a narrow swing resulting a narrow column of stitching. At 5, or the widest zigzag mark, the needle takes a large swing resulting in a wide column of stitches. In case of twin needle sewing, this control should be set in the range of gray bar or less than 2½ otherwise needle hits needle plate.

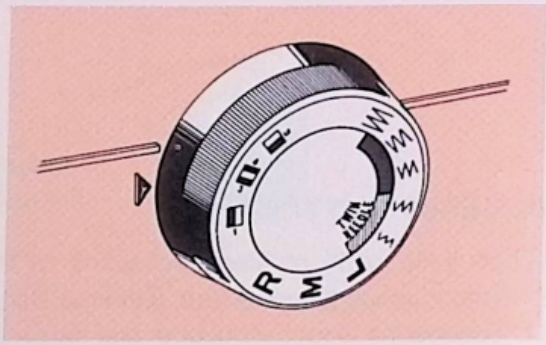
Note: It is mechanically impossible to turn the dial clockwise further than widest stitch width position, therefore, for setting the dial for four-step buttonholing from the stitch width control range, turn the dial counter clockwise.

- **Buttonhole Control:**

The first buttonhole picture (step 1) sews in forward on the left edge of buttonhole. With the control at buttonhole step (2–4), your machine does not feed fabric for bartacking the buttonhole ends and, with it at buttonhole step (3), it feeds fabric in reverse to sew the right buttonhole edge.

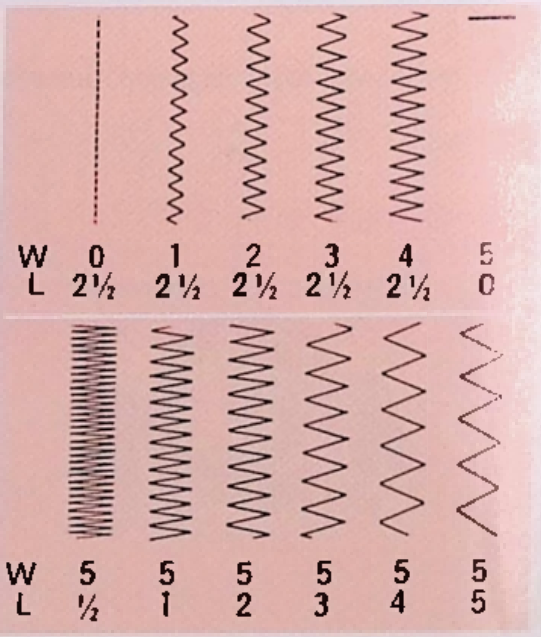


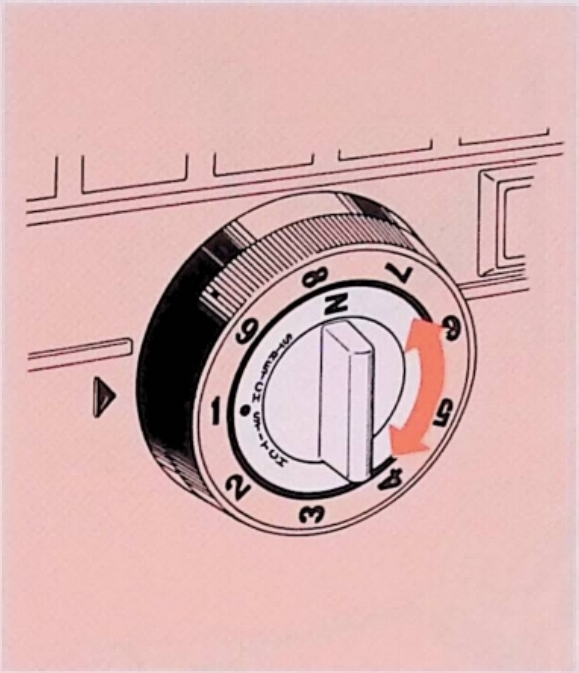




RELATING STITCH LENGTH TO STITCH WIDTH

When the stitch width control is set at one particular width (such as 5 for the widest zigzag), the stitch length control will now control how close those stitches come together. At length 0, the fabric does not move, resulting in a bar of stitches formed one on top of the other, as is used in button sewing. At the symbol ▮ or near 0, the feed pulls the fabric through slowly, resulting in a dense column of stitches called a satin stitch. At length 5, a very long open zigzag results.





STRETCH STITCH CONTROL

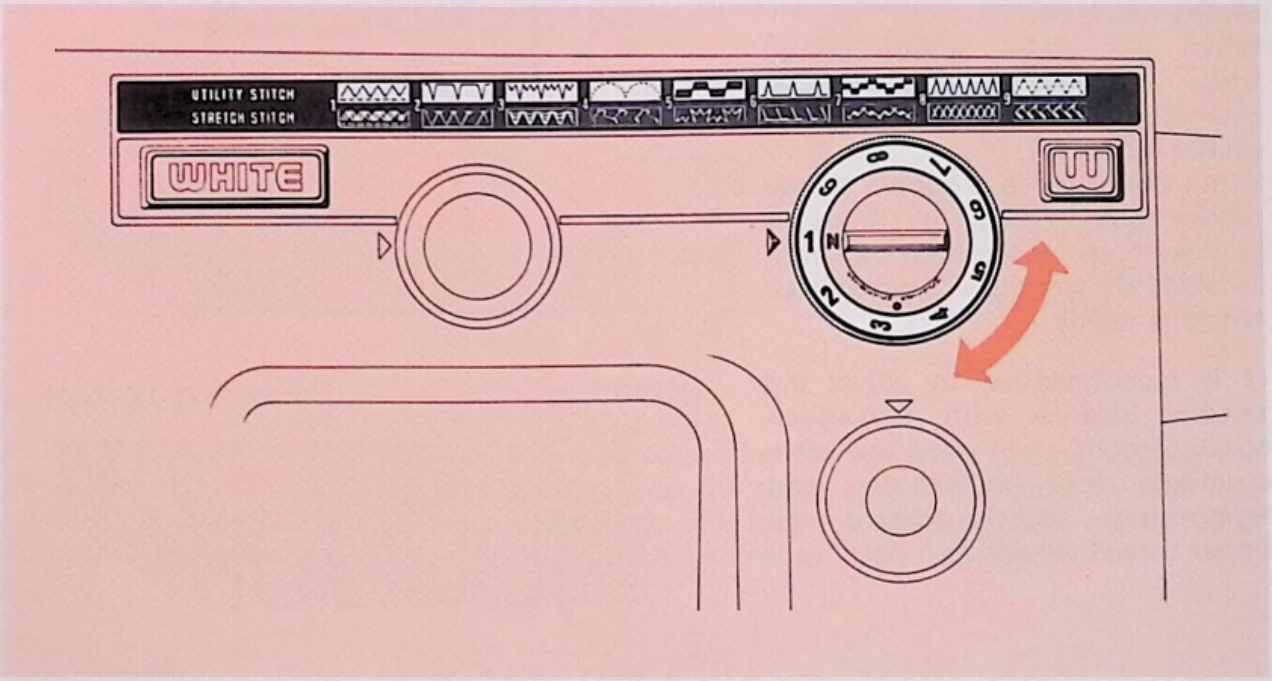
Selection between ordinary stitching and triple automatic reinforced stitching called stretch stitch is made by the stretch stitch control. With the control at "N" position, ordinary sewing is performed. With the lever at "STRETCH STITCH" position, your machine automatically performs the stretch stitch with the repetition of two forward and one backward stitch combination. A reinforced seam of stretch stitch that will stretch considerably more than the fabric used is the most wanted feature in a sewing machine today.

Its uses are almost unlimited and the more you use your machine the more it will become apparent to you.

When stretch stitching, the stitch length control should be always set at 5.

STITCH PATTERN SELECTOR

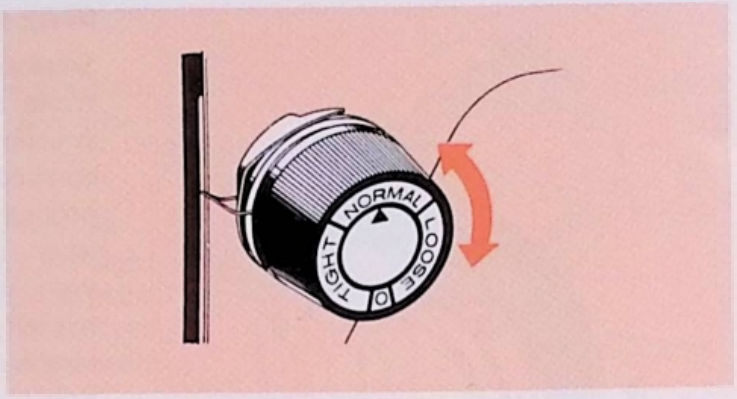
In addition to straight and zigzag stitches of both ordinary forward and special automatic back-and-forth (stretch) sewing, 16 different kinds of utility and stretch stitches as shown on the panel of stitch pattern selection table can be selected. The numbers marked on the stitch pattern selector knob shows the selected stitch patterns shown on the panel with the corresponding numbers. For the stitch patterns shown in the upper row in white boxes, set the stretch stitch control at "N" position for forward sewing. For those in the lower row in red boxes on the panel, set it at the red dot position marked as Stretch Stitch for automatic back-and-forth (Stretch) sewing. In case of stretch stitches, set the stitch length control at 5.



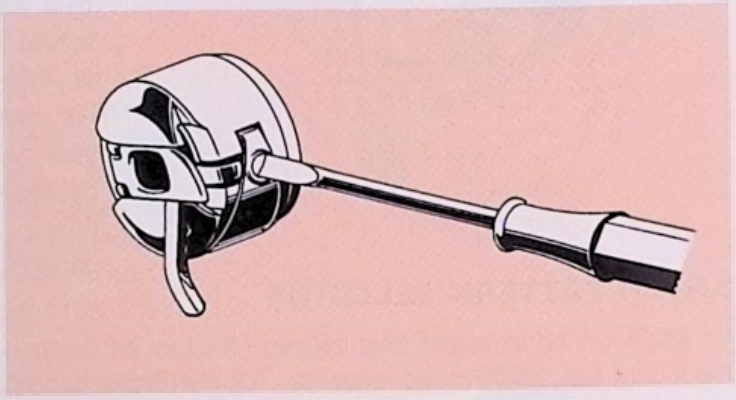
CONTROLS:

ADJUSTING THREAD TENSIONS

Always adjust the upper thread tension with the presser foot down, as the tension is released when it is raised. To increase the tension on the upper thread, turn tension control to the right. To decrease, turn to the left. Before adjusting the tension be sure that the machine is threaded properly.

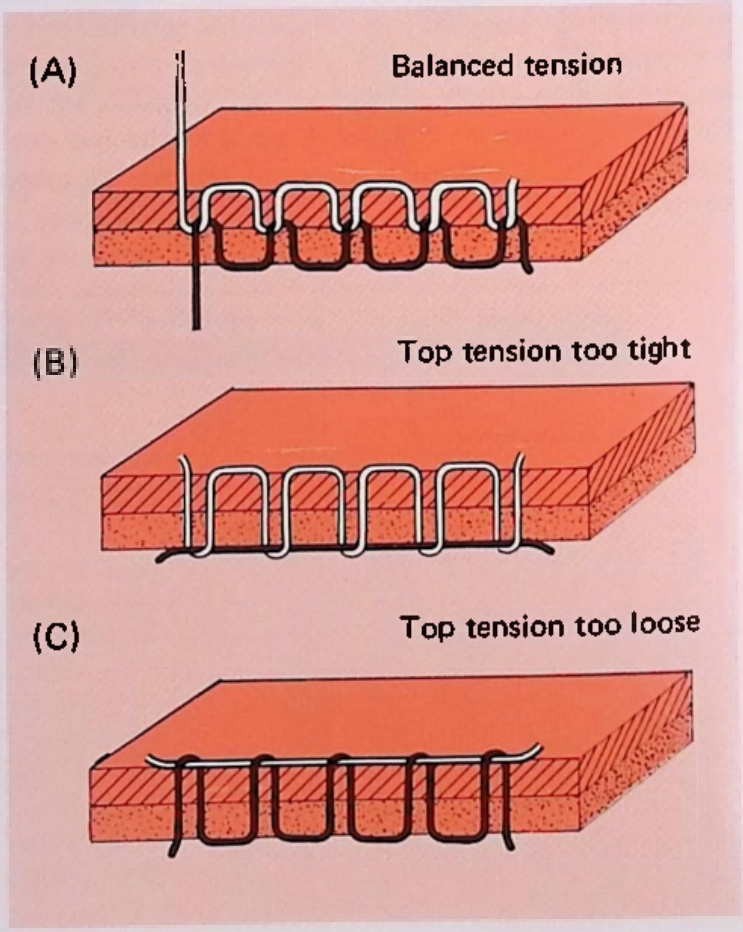


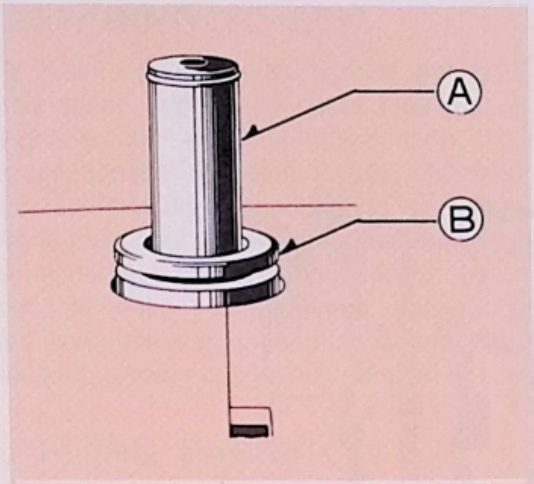
It is seldom required to adjust the bobbin thread tension, however, when necessary to change bobbin thread tension, turn small screw on side of the bobbin case clockwise to tighten, counterclockwise to loosen.



When both tensions are properly balanced, a perfect stitch will be formed with both threads interlocking in fabric (A).
When the upper tension is too tight, the bobbin thread is pulled up over the upper thread which is lying flat on the fabric (B).
When the upper tension is too loose, the upper thread forms loops over the bobbin thread lying flat on the fabric (C).
When the upper and bobbin thread tensions are balanced but fabric is puckered in sheer fabrics, both tensions are too tight. Loosen both tensions evenly.

It is recommended to adjust the tension balance with a medium stitch length. In case of satin stitching for buttonholes and embroidery slightly loosen the upper thread tension.



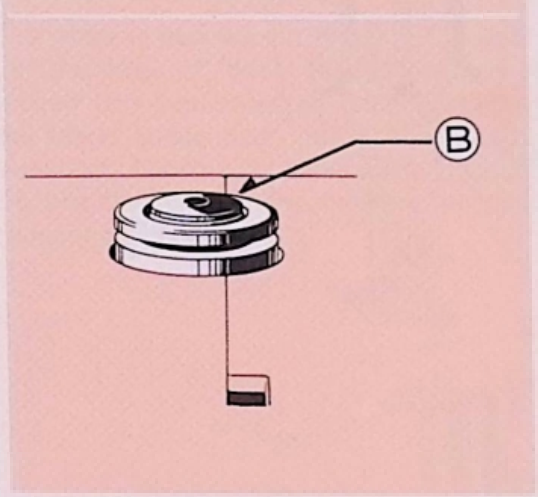


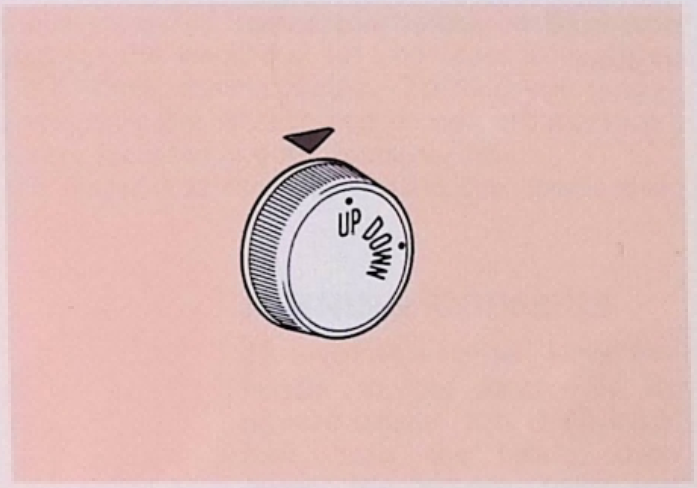
ADJUSTING PRESSURE ON FABRIC AND FEED DOG HEIGHT

- **General Sewing**

Usually for normal sewing, except for sewing on very heavy and bulky fabrics, the center pin (B) of the pressure control should be at its lowest position, with the feed dog height control at "UP" position.

For above exceptional fabrics, reduce half the pressure. To reduce half the pressure, press the outer ring (A) of the pressure control, then press the center pin (B) down again to halfway.





Fabric	Pressure on fabric	Feed dog height
Ordinary fabric of less elasticity:		
Heavy and bulky fabrics	Half	Up
Medium and light weight fabrics	Full	Up
Very stretchy fabrics and knits:		
Heavy and bulky ones	Half	Up
Medium and light weight and sheer ones	Full	Up

- **Mending and Darning**

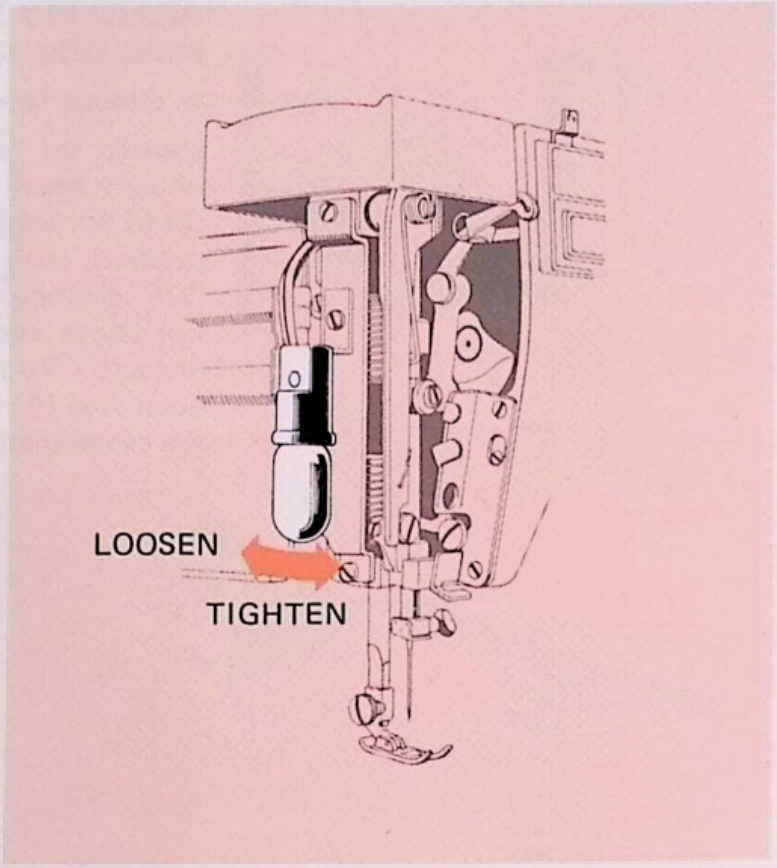
In order to move the fabric freely in any direction for darning and mending, release the center pin (B) completely by pressing down on the outer ring (A). Turn the feed dog height control to "DOWN" position, which drops the feed dog well below the needle plate. To return the feed dog height to normal, turn the control to "UP" position.

SEWING LIGHT

The sewing light is located in face cover directly over the needle so as to better illuminate the stitching area.

Turn the light on and off by connecting and disconnecting the plug.

To replace bulb, disconnect the plug and open face cover to the left. Unscrew bulb as you do a conventional light bulb. Place new bulb in socket and screw in place.



PREPARING TO SEW

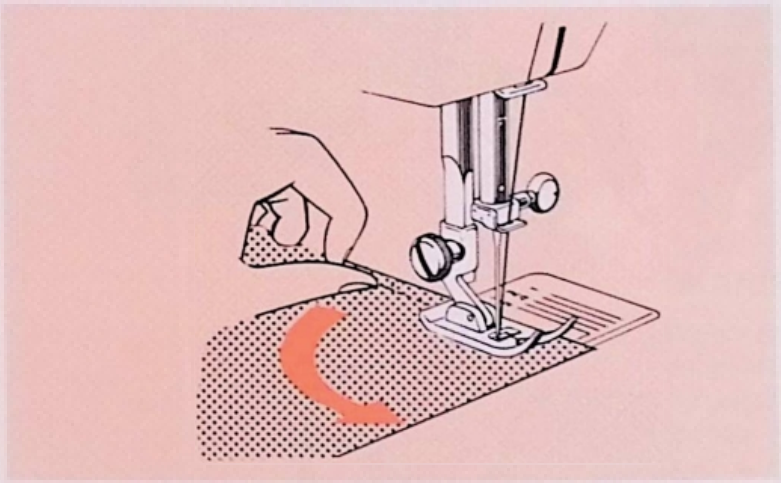
Have take-up lever at highest position before starting to sew. Pinning may be used as a time saver instead of hand basting. It is possible to sew over pins when placed at right angles to the edge of fabric with the pin head at the raw edge, but for best results it is recommended that the pins be removed as you approach the presser foot. Sewing over pins can result in damaged needles.

Place material and threads under presser foot and lower the presser foot. Lower the needle by turning hand wheel by hand to check if the needle will pierce the stitching line you want to sew. You are now ready to begin sewing. Press the speed control. The speed of the machine is regulated by increasing or decreasing the amount of pressure exerted on the control. Never run machine without material under presser foot.

GUIDING FABRIC

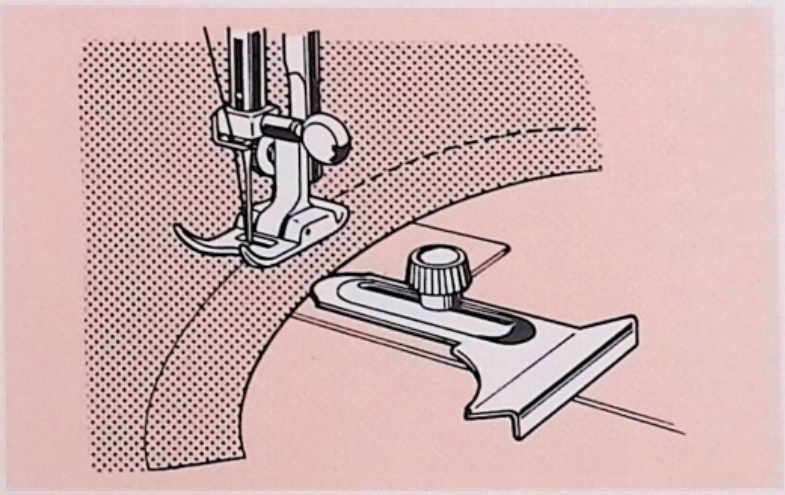
The scale is etched with every 1/8 inch distance measured from the center of needle plate. Let the edge of fabric follow the line selected for the seam, and let your eyes follow the etched line you selected for the seam, not the needle, during sewing. To help you guide the fabric, place cloth guide attachment securing it by the extra thumb screw onto machine bedplate. Cloth guide and extra thumb screw are included in your accessory box.

Do not try to help the feeding by pulling the material as this may deflect the needle and cause it to break.



TURNING CORNERS

To pivot at a corner, leave the needle in the fabric in its upward stroke. Lift the presser foot, turn the fabric, then lower the presser foot and continue sewing.

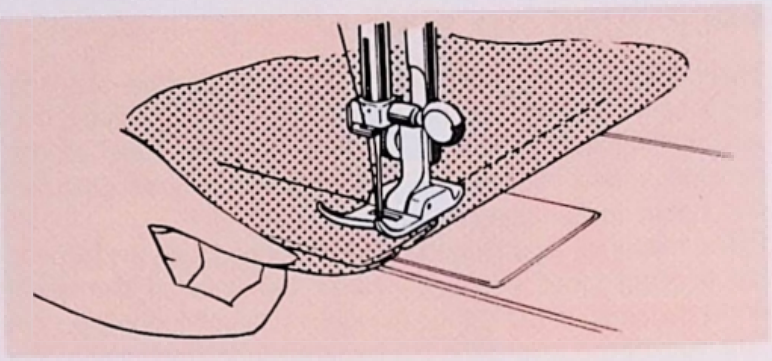


CURVED SEAMS

Use slightly shorter stitch length than that of the rest of the seams. On the part where elasticity is required on the seam, sew by stretch stitch. The cloth guide may be used on angle as shown.

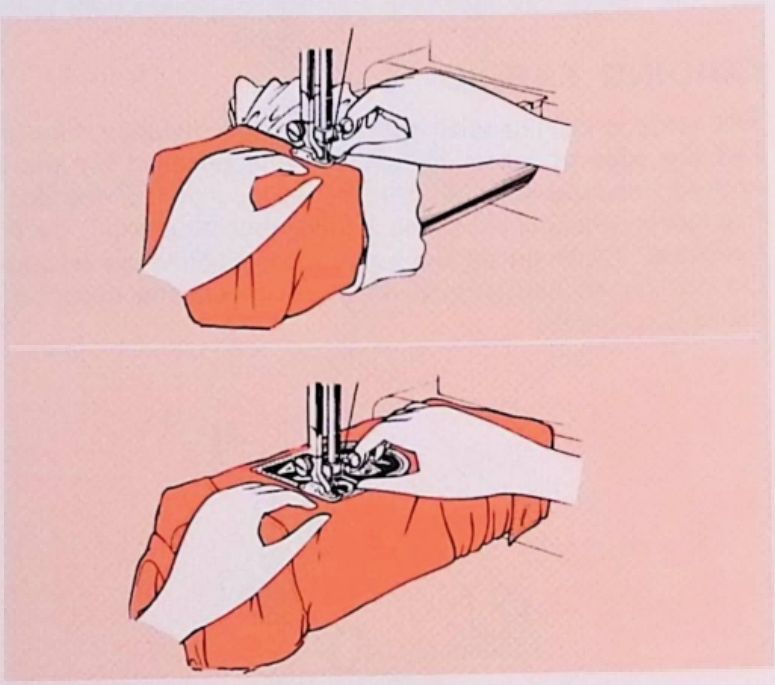
SEWING ACROSS HEAVY SEAMS

When approaching heavy seam, hold the fabric upward on an angle so that the heavy seam falls under the front curve of presser foot.



FREE-ARM SEWING

For sewing tubular and hard-to-reach areas, use your machine as a free-arm. Stitching buttonholes or sewing buttons on a cuff or neckband; topstitching a sleeve; edge finishes on sleeves, pantlegs and waistlines; darning and patching knees, elbows; and other areas of wear on children's clothing become as easy as sewing a common seam when you have the free-arm at your fingertips.



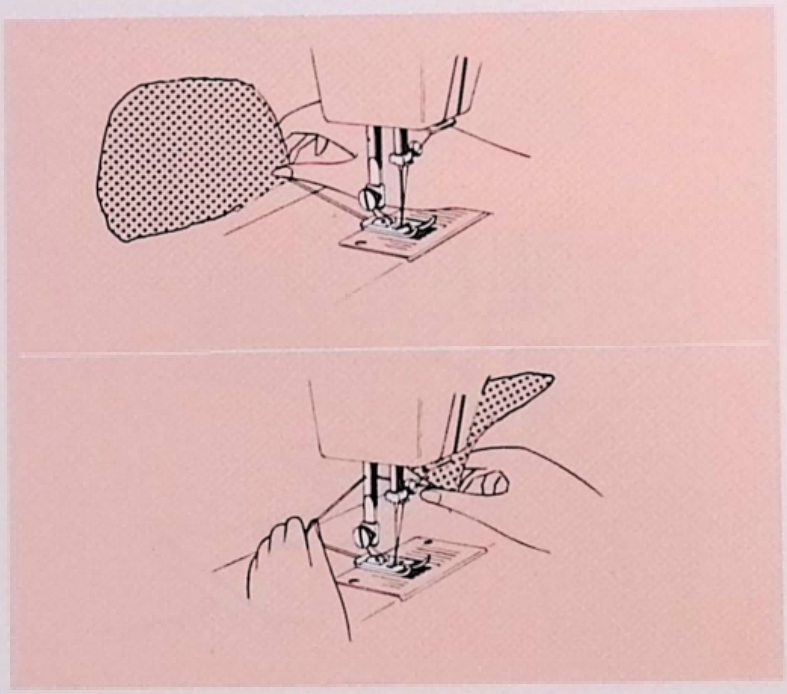
REMOVING THE WORK

Be sure to stop the machine when the thread take-up lever or needle bar is at the highest position.

Now raise the presser foot and draw the fabric back and to the left and pass the threads over the thread cutter.

Pull down slightly, holding thread in both hands, so as not to bend the needle.

Leave the ends of threads under the presser foot.



Pattern: 1
Length: 2–3
Needle Position/Width: M
Feed Dog: Up
Pressure: Full
Foot: Straight Stitch or All Purpose
Stretch Control: N

STRAIGHT STITCH:

SEAMS

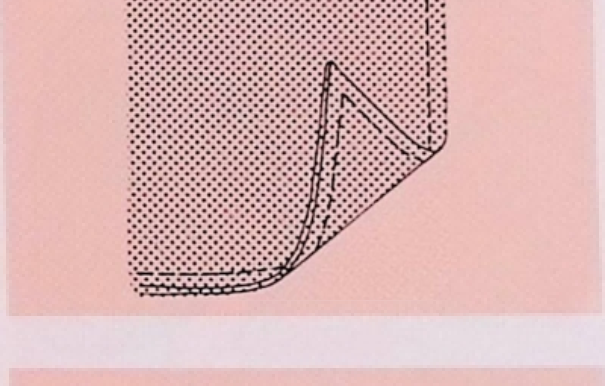
The normal stitch length for most fabrics is between 2–3 but the length chosen should depend on the fabric and area of usage. Usually, heavier fabrics require longer stitches, and lighter weight fabrics require shorter stitches. For curved seams and bias cut areas use a shorter stitch length. Be sure to set the stitch width control at M.

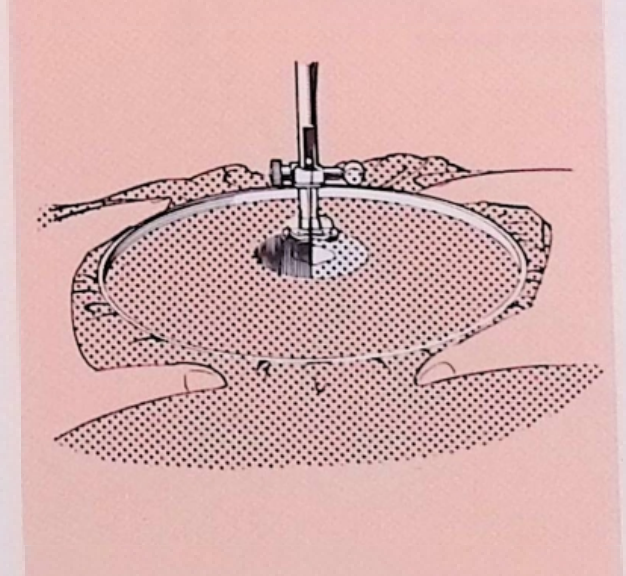
BASTING/TOPSTITCHING

Pattern: 1
Length: 4–5
Needle Position/Width: 0
Feed Dog: Up
Pressure: Full
Foot: Straight Stitch
Stretch Control: N

Sewing a seam with a longer stitch is useful for temporary seams prior to fitting. Basting stitches also may be used when gathering in fullness.

Topstitching can be done very effectively with the long straight stitch. For a bolder stitch, two threads of the same type can be threaded through one needle (size 14 or 16). A heavier thread such as buttonhole twist may be used for topstitching, but be sure to use a larger needle (size 16 or 18).



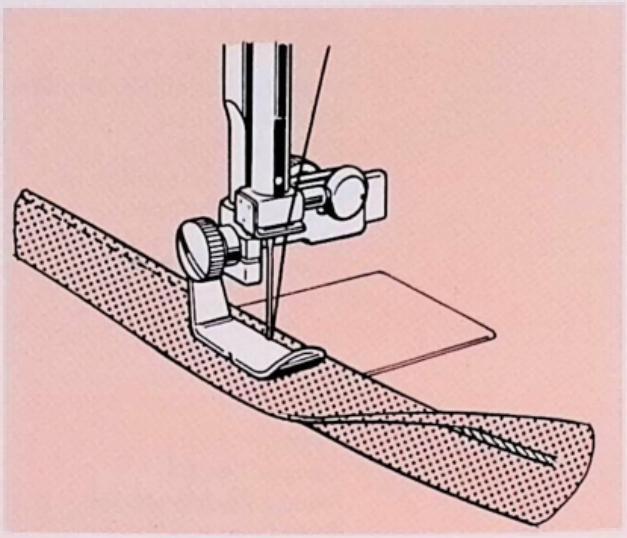


DARNING

Worn spots or small holes can be darned very easily. Use of an embroidery hoop is optional depending on the fabric. A fine thread is recommended so that the fabric and thread will blend together invisibly. Trim the ragged edges from the area to be darned. Hold the threads to start, then move the fabric slowly backwards and forwards while running the machine very fast to fill the area. Professional results will be attained by moving the fabric in a figure eight pattern while sewing. After filling in the area lengthwise, reweave with crosswise stitches in the same manner.

Pattern: 1
Length: 0
Needle Position/Width: M
Feed Dog: Down
Pressure: 0
Foot: All Purpose
Stretch Control: N

CORDING/SEWING IN ZIPPER



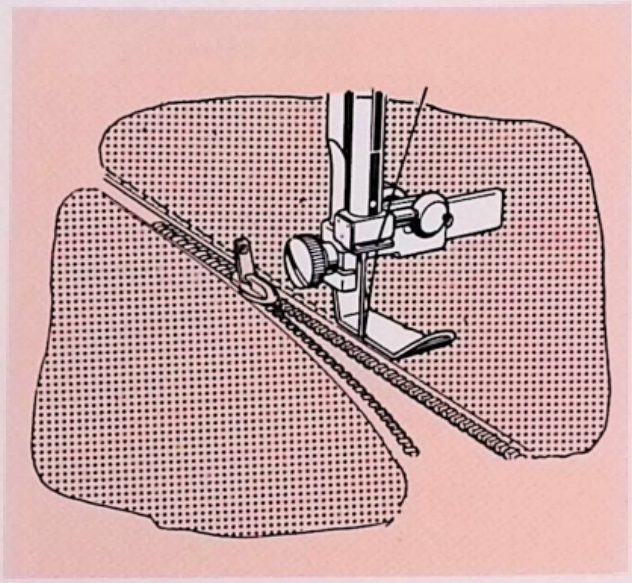
- **Insert Cording**

(A) Fold bias strip of fabric over cord. Loosen the adjusting screw on the back of cording/zipper foot and set the foot to the left of needle.

(B) Sandwich the welting between two layers of fabric with right sides together. Stitch a second time with cording/zipper foot to the right of needle so that the needle stitches close to the cord through all thicknesses.

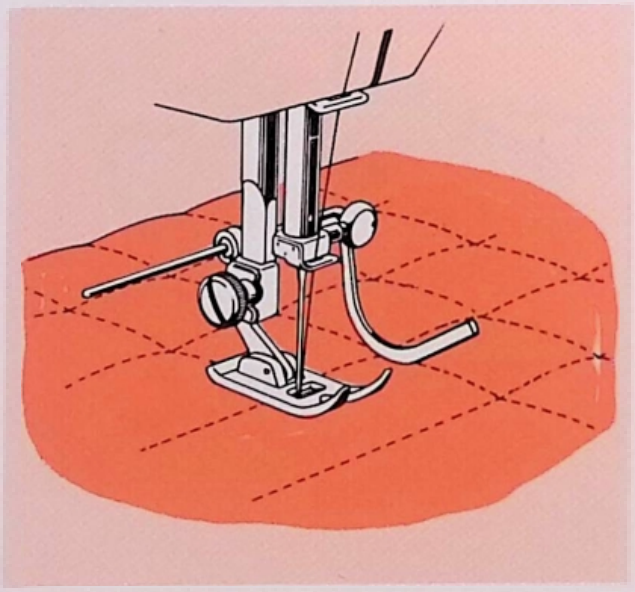
- **Zippers**

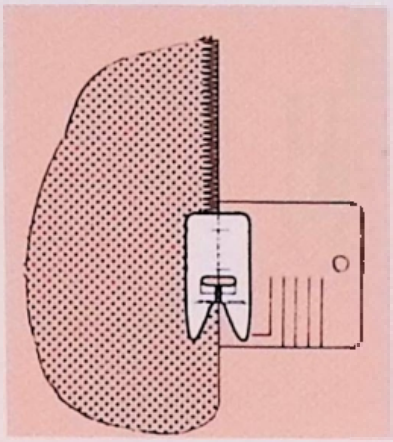
Swing the foot to left or right of the needle as needed so that the foot sews very close to zipper teeth.



QUILTING

Parallel straight lines are easy to sew with the quilting guide. To attach the guide, loosen thumb screw and slip the U-shaped holder of the guide between presser foot and thumb screw. Tighten the thumb screw securely. Adjust the curved bar to the desired distance from the needle. Sew the first line of stitching as desired, then, for the succeeding rows let the guide follow along the previous stitch line. A straight stitch, zigzag, or any other stitch may be used.





Pattern: 1
Length: 1–3
Width: 5
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N

ZIGZAG STITCH:

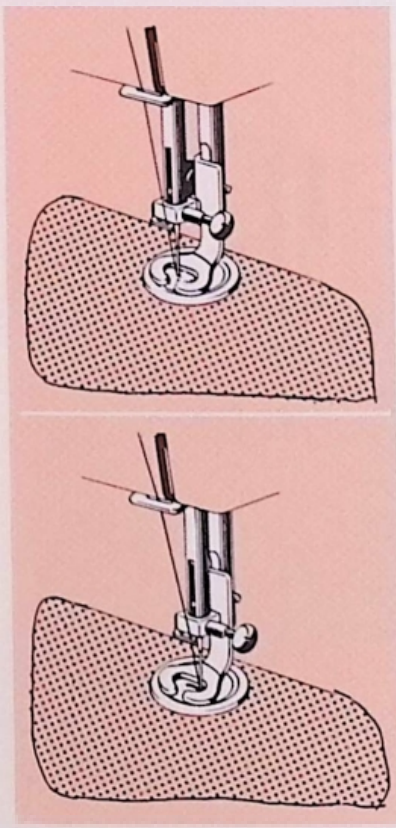
OVERCASTING

Place the edge of the material underneath the opening of the sewing foot and guide raw edge along the center slot of the foot allowing stitch to form half on and half off the fabric.
The multiple stitch zigzag is a wiser choice for most fabrics.
See page 29.

Pattern: 1
Length: 1–3
Width: 1
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N

SEWING KNITS

The narrow zigzag can be used in seams of firm knits for added strength. After sewing, open seam and press flat. Tiny zigzag stitches can hardly be seen and the seam will give when stretched.
Generally on knits, however, try the straight stretch or special stretch stitches.
See page 35.



Pattern: 1
Length: 0
Width: 2–5
Feed Dog: Down
Pressure: Full
Foot: Button Foot
Stretch Control: N

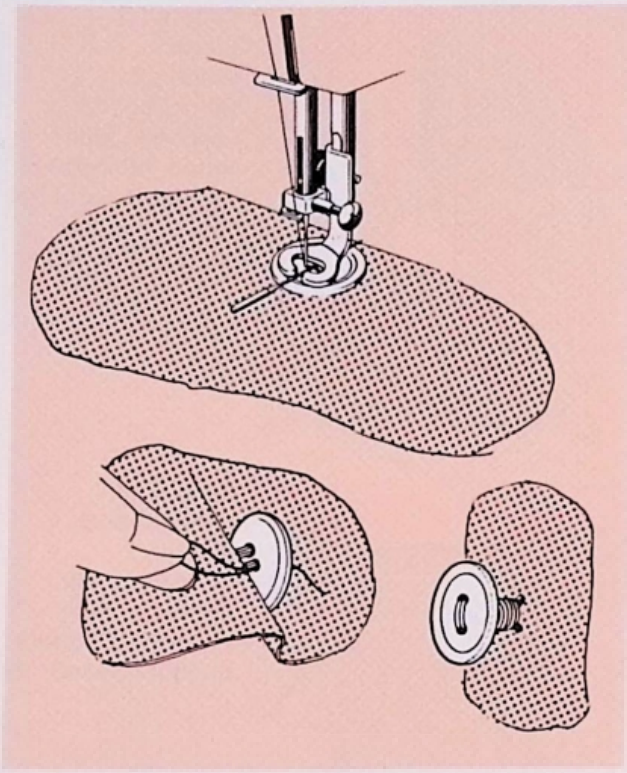
SEWING ON BUTTON

Place the button so its left hole comes directly under the needle of its left zigzag swing then gently lower the button foot. Take a stitch into the hole.
Raise the needle from the left hole, and move zigzag width control to the right until the needle comes down exactly over the right hole in the button.
Note: Be sure the needle clears the holes of the button by moving the wheel by hand before running the machine fast. Usually 6 to 8 stitches are adequate for securing a button in place. Stop with the needle in the left hole. To lock the threads, set the stitch width at 0, and take a few stitches in the left hand hole.

- **With a Thread Shank**

Buttons sewn on coats or jackets should have a thread shank to make them stand away from the fabric. To form a thread shank, sew over a pin or rounded toothpick.

After stitching the button to the fabric, remove work from under the presser foot leaving threads about six inches from fabric. Remove pin or toothpick. Pull the threads to back of button and form a shank between button and fabric by winding threads tightly around the attaching stitches. Pull threads to back of the fabric and tie thread ends securely.

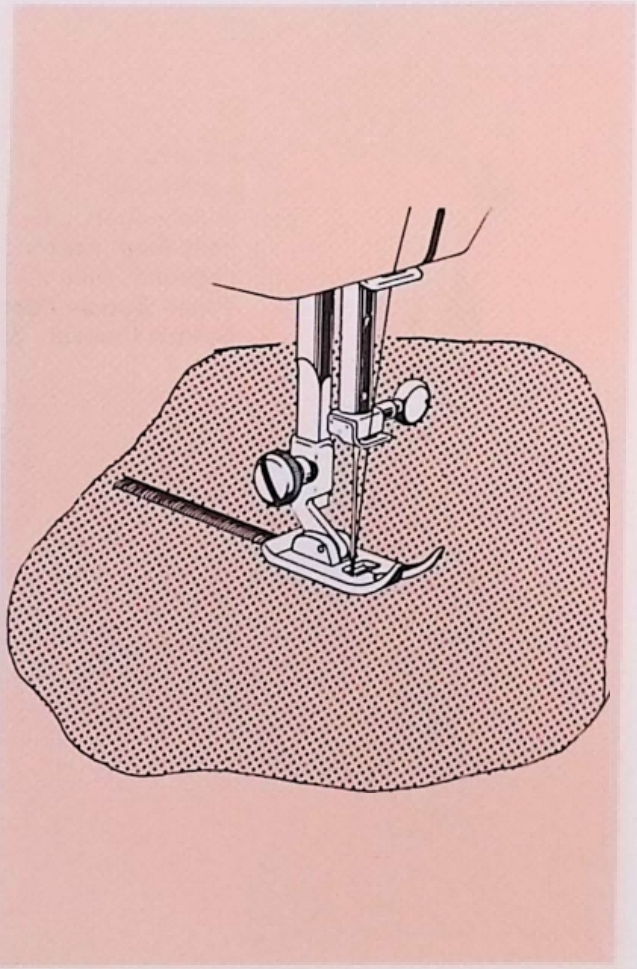


SATIN STITCHING

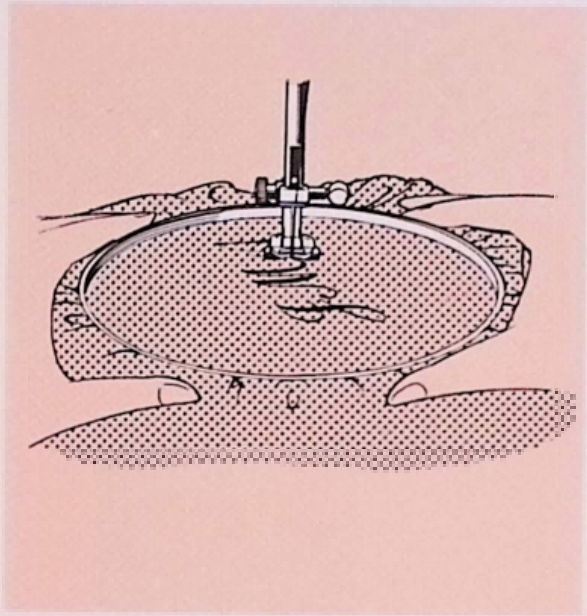
This is useful for decoration such as tapering, manual designed embroidery, monogramming and applique.

The satin stitch, which is really just a very close zigzag stitch, is obtained by setting the stitch length as near to "0" as possible without stopping the feeding action or at the symbol ▮. The setting will vary for different fabrics. It may be desirable to loosen the upper tension slightly to cause the threads to lock underneath in order to make the top surface look especially smooth. For lightweight fabrics, place a paper underneath the fabric for best results.

Pattern: 1
Length: ▮
Width: 1–5
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N



Pattern: 1
Length: 0
Width: 1–5
Feed Dog: Down
Pressure: 0
Foot: All Purpose
Stretch Control: N

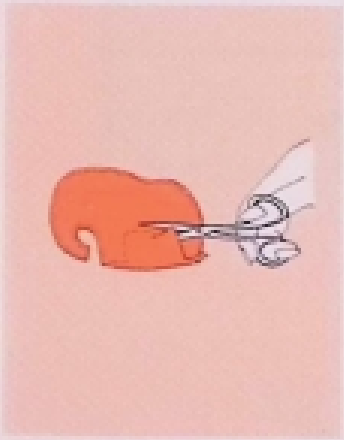


FREEHAND MONOGRAMMING

For giving garments and linens a personalized touch, first transfer the design to the right side of the fabric. An embroidery hoop is recommended especially for soft fabrics and toweling.

In order to monogram, you must move the fabric slowly and run the machine rapidly. Monogramming is like writing by moving the paper under a stationary pen. Guide the fabric slowly so that the zigzag falls close together like a satin stitch, but be careful that the stitches do not pile up. When guiding from side to side, move fabric slightly faster to avoid a heavy area. Practice by forming loops. Once this is accomplished any letter is easy.

Sometimes the use of paper or non-woven interfacing under the fabric may make guiding the fabric easier. The paper or interfacing may be torn or cut away at the completion of the monogram. When monogramming towels, plastic film placed on the top will help cover loops and make the monogram smooth. Pull or cut away remaining plastic film when finished.

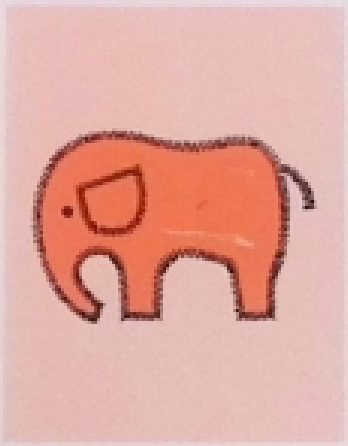


Step 1:
Pattern: 1
Length: 1
Width: 0–2
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N

APPLIQUE

Applying decorative shapes of fabric scraps to household articles and clothing is a very interesting way of trimming an otherwise plain article. First, trace the design on fabric to be appliqued, then pin or baste it securely in place on garment. With a small straight stitch or narrow zigzag, sew around the traced design.

At the excess fabric is trimmed away, sew around the applique with a satin stitch. For a smooth curve, stop frequently at the inside edge of the curve to pivot the fabric slightly. Corners look much better when the point is stitched by pivoting rather than just turned. As with all decorative stitches, paper may be used to give more body to the fabric when stitching and can be torn away when the applique is completed.

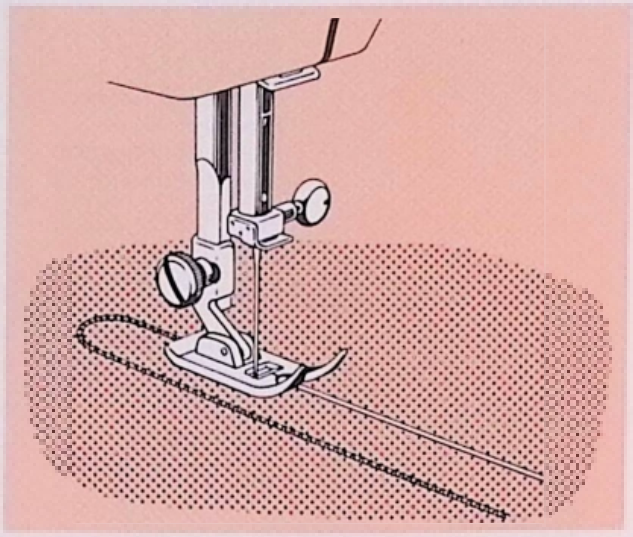


Step 2:
Pattern: 1
Length:
Width: 2–5
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N

GATHERING OVER A CORD

Ordinary gathering with a basting stitch often breaks thread while pulling in fullness. A small zigzag across a cord such as crochet thread or carpet thread, gives a much stronger cord for gathering fullness into fabrics. Once the gathers have been stitched in place, the cord can be pulled out in order to eliminate bulk.

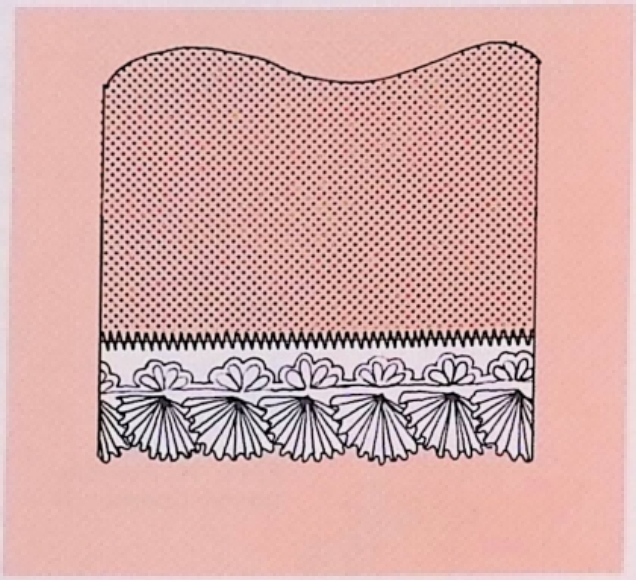
Pattern: 1
Length: 2
Width: 2–3
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N



LACE APPLICATION

Attaching laces or trims adds a special touch to lingerie, dresses, or linens. Pin or baste lace in place easing or mitering corners where necessary.
A straight edged lace or braid has a convenient line to follow when sewing. When using a scalloped edged lace, follow the design of the lace for an almost invisible application.

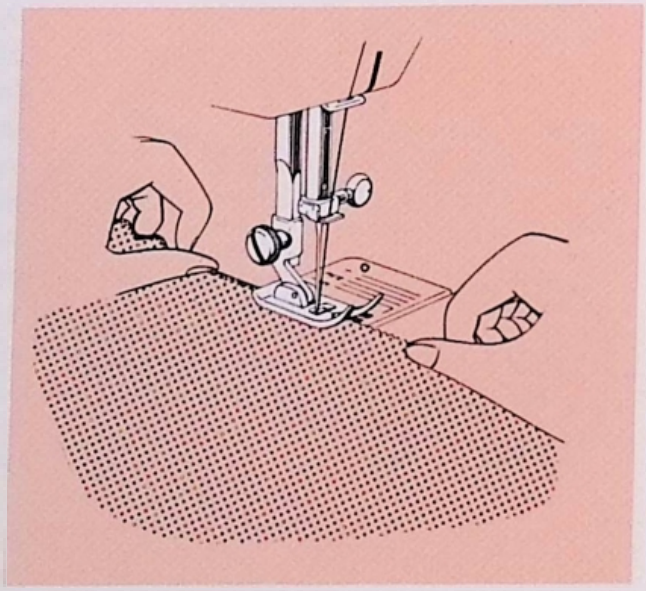
Pattern: 1
Length: ⅛–1
Width: 1–3
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N

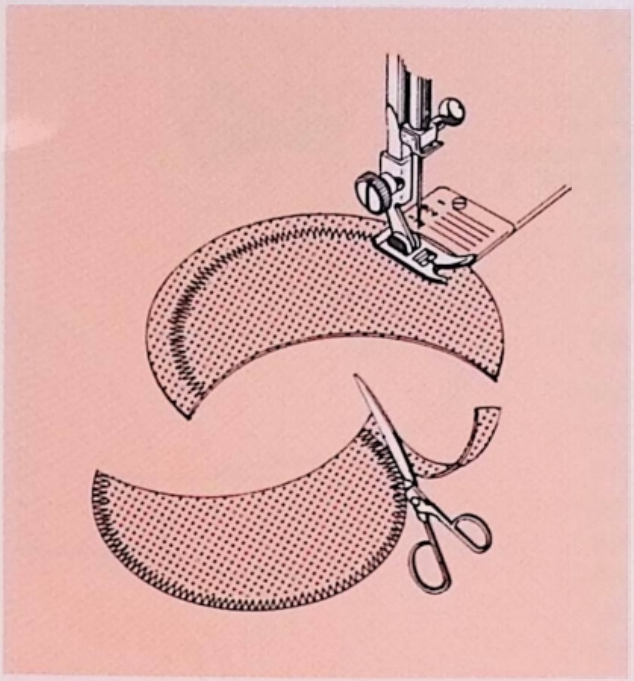


FLUTTER HEM

An unusual way of hemming or finishing edges of tricot or soft knits is by a flutter edge. Hemming in this manner is just like overcasting an edge, but the fabric is stretched in back and in front of the needle as you sew. For best results, pull the fabric equally, making sure the needle goes over the edge. When you stop to reposition your hands, keep the needle in the fabric.

Pattern: 1
Length: ⅛–⅛
Width: 4–5
Feed Dog: High
Pressure: Full
Foot: All Purpose
Stretch Control: N

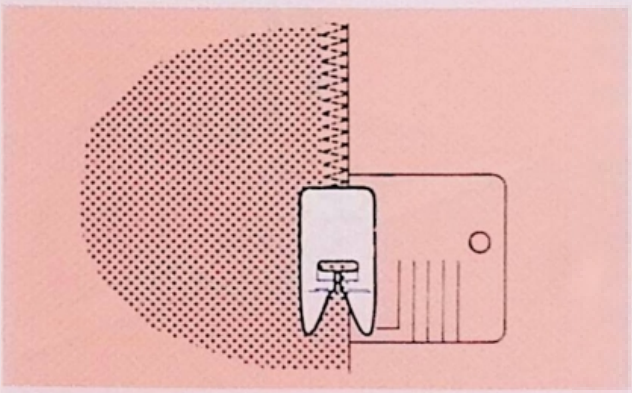




SEWING TIPS

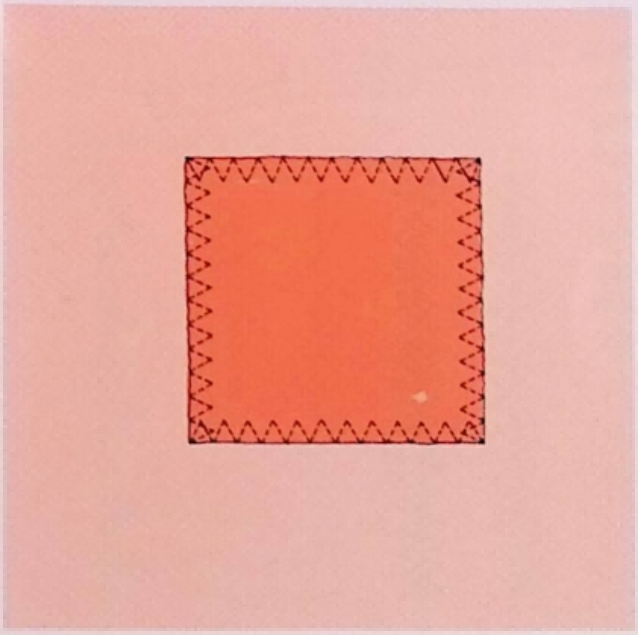
When a dainty hair line finish is particularly desirable for the inside seams of sheer collars, facings, and yokes, seam allowance that would ordinarily show through is eliminated by following the seam outline with a narrow zigzag stitch. Trim seam allowance close to line of stitching. Turn and press.

Pattern: 1
Length: ½–1
Width: ½–2
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N



MULTIPLE STITCH ZIGZAG

The multiple stitch zitzag can be used for hundreds of various kinds of sewing applications, such as replacing worn blanket bindings for both a decorative and durable finish, overcasting an edge to prevent fraying, applying elastic waist bands to skirts and dresses, sewing a zigzag stitch on soft or sheer material preventing puckering, etc.
Just sew like ordinary zigzag stitching.



Pattern: 9
Stitch Length: 4–5
Width: 3–5
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N

INTERLOCK STITCH

For a very fine, delicate seam in nylon tricot or jersey, the interlock is used. Lingerie or tricot seams should only be about 1/8 inch in finished width. Just sew like ordinary zigzag stitching. Shell tuck on soft knits is also produced with this stitch by swinging the zigzag to the right of the folded edge of the fabric placed its bulk part to the left.

Pattern: 8
Length: 2
Width: 5
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N

TWIN NEEDLE SEWING

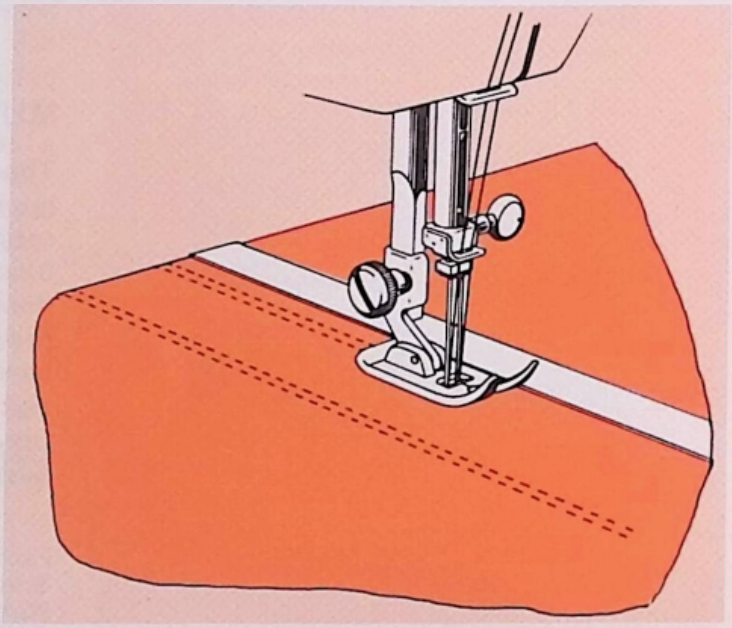
Attractive parallel straight stitch effects and decorative zigzag patterns can be easily made by sewing with the twin-needle, and they are very effective for various kinds of garment finish sewing such as top stitching, needle position should be at left needle position and border sewing, etc.

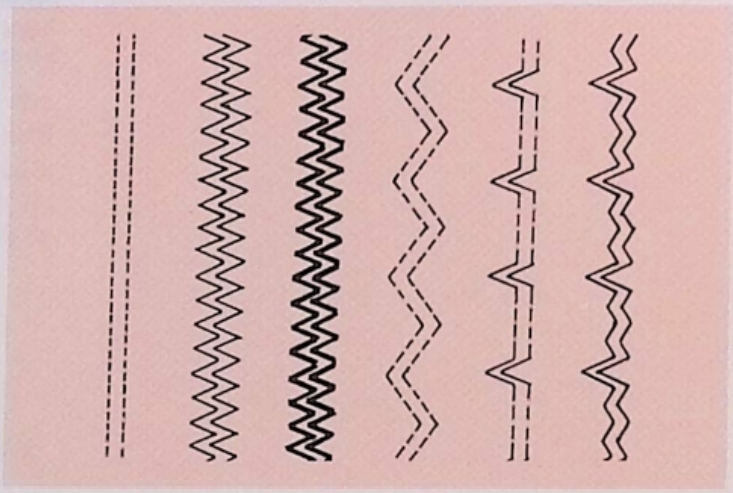
Except buttonhole stitches, all built-in special stitch patterns can be applied with the twin needle sewing.

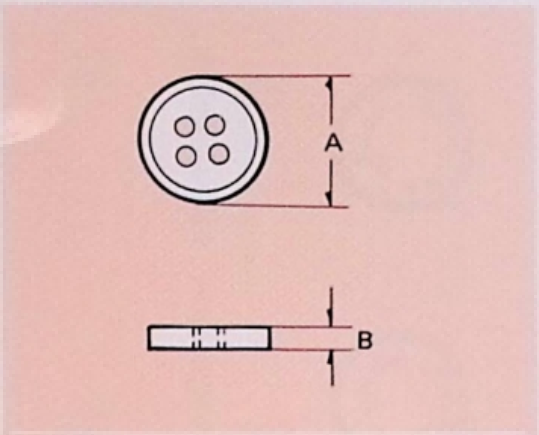
In case of twin needle sewing, the stitch width control should be at less number than "2½" or in gray bar making. The use of color-matched or contrasted threads will result in a more attractive finish.

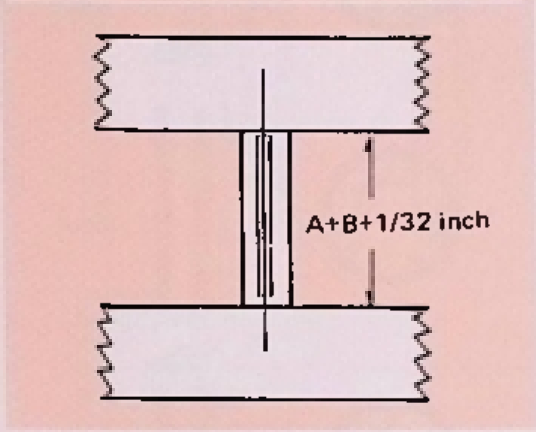
Note: Use left needle position sewing and zigzag needle plate, when twin needle sewing.

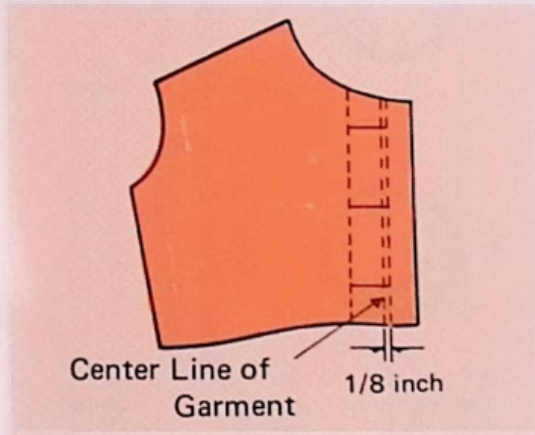
Pattern: Any
Length: 1–5
Width: Less than 2½
Foot: All-purpose
Needle Position: L only

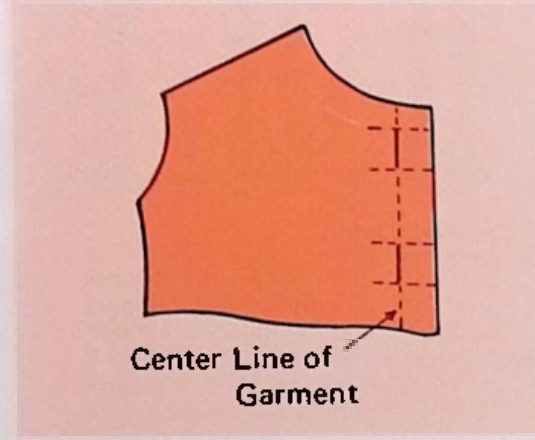












BUTTONHOLES:

Various fabrics require various methods of sewing buttonholes. Three different methods are given below, with suggested uses. If you are in doubt as to which method is best for your fabric, test the methods in question and choose the best according to the finished appearance.

PREPARATION

For the best results, a good quality mercerized cotton thread should be used. Polyester threads often result in puckered or heavy unattractive buttonholes. The finer your fabric is, the finer your cotton thread should be.

An interfacing should be used under the buttonholes to give body, to strengthen, and to help them withstand wear.

To establish the correct length of the buttonhole, add the length of the button (A), plus the thickness of the button (B), plus 1/32 inch for the bartacks. The length may be marked on the garment with a basting stitch, tailor's chalk, or an invisible cellophane tape, as shown. Horizontal buttonholes should extend 1/8 inch beyond the centerline of the garment. Vertical buttonholes are placed so that the cutting space of the buttonhole is directly on the center line.

Always make a practice buttonhole on a scrap of the garment fabric before making any buttonholes on your garment. On your test sample, duplicate the thicknesses found in the garment and be sure to include the interfacing. The test sample should help determine the length needed for the button to pass through the hole easily, as well as the stitch length needed for the particular fabric. As with the satin stitch, the stitches should be close together, but not so close that they pile up. Be sure to use the buttonhole foot.

BUILT-IN BUTTONHOLE

This buttonhole eliminates the need for pivoting the fabric. It is used most often on light and medium woven fabric. The stitch length control should be at "BUTTONHOLE" mark or near 0 not to stop feeding action. A buttonhole of about 3/16 inch width can be made by simply turning stitch width control from buttonhole position 1 to 2, 3 and 4 in sequence on the stitch width cotnrol panel.

1. Set the stitch width control for the red square marked (1) buttonhole position. Lower needle into the mark at the top left end of buttonhole Lower presser foot and sew on the left edge of buttonhole until you reach the bottom end of buttonhole.

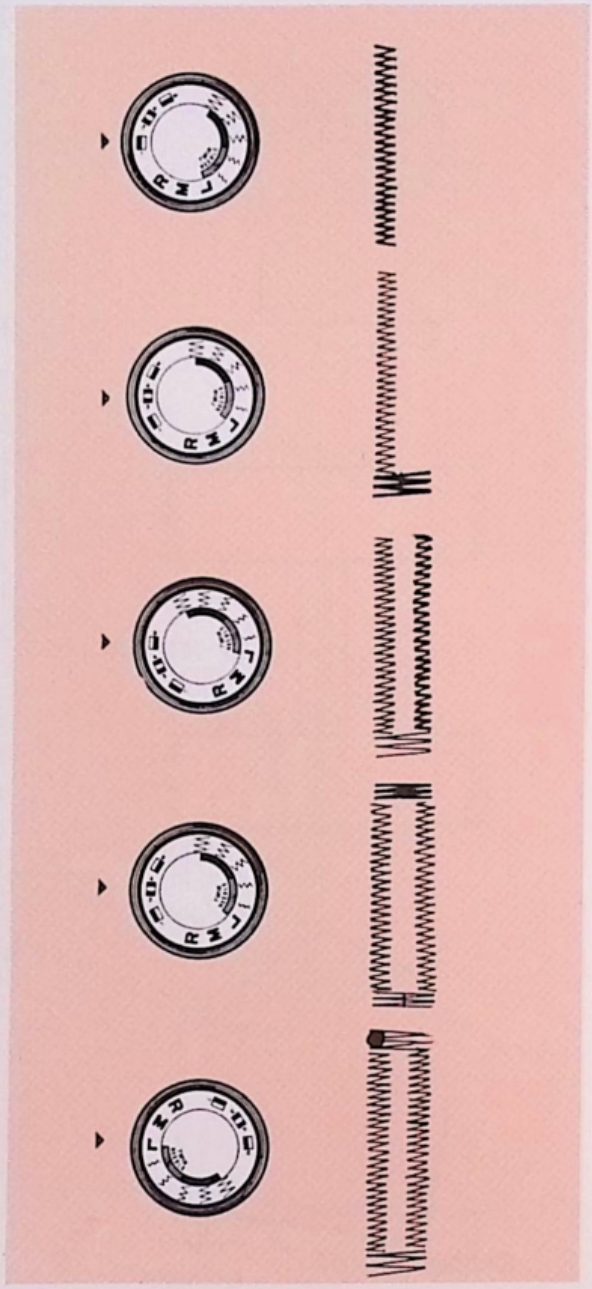
2. With the needle up and the control to the (2–4) position take a few stitches to bartack the buttom end of buttonhole.

3. With the needle up, turn the stitch width control to the (3) position. Sew on the right edge of buttonhole. At this position the machine is feeding in reverse.

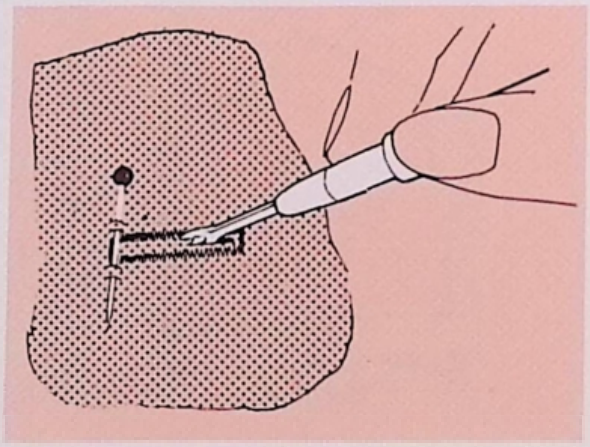
4. With the needle out of the cloth, turn again to the (2–4) position and complete the buttonhole by bartacking on the top edge of buttonhole.

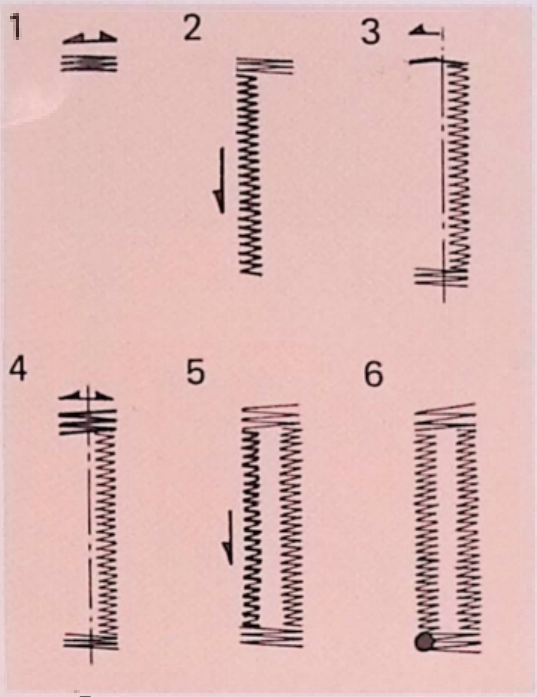
5. To lock the stitches, make sure the needle is out of the fabric and set the control at L and feed dog height down. Then take a few stitches.

6. To prevent cutting through the bartack insert a straight pin through the bartack. Cut buttonhole open.

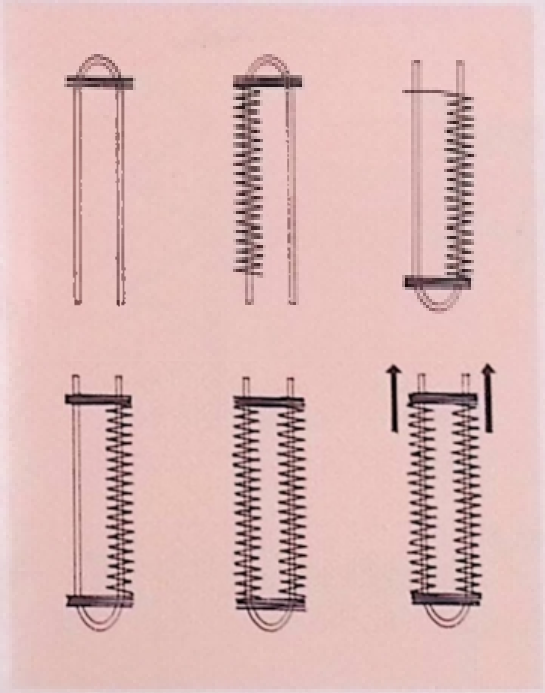


Pattern: 1
Length: Buttonhole
Width: 1 - 2-4 - 3 - 2-4
Feed Dog: Up
Pressure: Full
Foot: Buttonhole Foot
Stretch Stitch: N





Pattern: 1
Length: Buttonhole
Width: 5–2–5–2–0
Feed Dog: Down-Up-Down-Up-Down
Pressure: Full
Foot: Buttonhole Foot
Stretch Control: N



Pattern: 1
Length: Buttonhole
Width: 5–2–5–2–0
Feed Dog: Down-Up-Down-Up-Down
Pressure: Full
Foot: Buttonhole Foot
Stretch Control: N

TURN-AROUND BUTTONHOLE

1. Place material under presser foot to sew the top of marked buttonhole. Turn feed dog height control to DOWN, stitch width control at 5 take few stitches to bartack the end of the buttonhole.
2. Turn feed dog height to up, set stitch width control at 2, then, sew down the left edge of marked buttonhole and finish stitching with needle in fabric at the right side of stitches. Set feed dog at DOWN.
3. Lift presser foot and pivot the fabric around, then lower presser foot and take one stitch to left turning hand wheel by hand.
4. With stitch width control at 5, take a few stitches, to bartack another end of marked buttonhole.
5. With feed dog to UP and stitch width at 2, sew down other edge of marked buttonhole.
6. Lock thread by stitching a few stitches at 0 width and feed dog height DOWN. Cut center open space of buttonhole carefully so as not to cut into the stitches, as illustrated previously.

Note: Try Stretch Blind Hem for reinforcing buttonhole, (Eyelash buttonhole).

CORDED BUTTONHOLE

Cording gives a reinforced raised buttonhole. It is excellent for use on bulky, woven fabric, or knits in which the stitching often gets buried and makes cutting difficult. On knits, a corded buttonhole will help keep the fabric from stretching out of shape.

Choose a heavy cotton crochet thread or buttonhole twist to use for the cording. Proceed as for the turn-around buttonhole having cord under the presser foot in such a way that the zigzag stitch covers the cord.

At the completion of the buttonhole snip the excess cord close to the bartack on woven fabrics. For knitted garments, always pull the cords to the wrong side by using a darning needle or needle threader, and knot the cord ends before clipping.

BLIND HEM & STRETCH BLIND-HEM STITCHES

The blind hem or stretch blind hem stitch provides a durable hem finish that is almost invisible on garments, drapes, and curtains. It is done easily with straight or slightly curved hems. With a little practice it will be a very quick and easy hem application and the hem will never need repairing.

Procedure:

(1) Prepare raw edge of hem in desired manner, such as overcast, ¼ inch stitched under pinked, hem tape, or just plain. (Step 1)

(2) Fold hem up desired length. Baste or pin ¼ inch from upper edge. Press in place. (Step 2)

(3) Fold hem back toward right side of fabric leaving about ¼ inch extended. (Step 3)

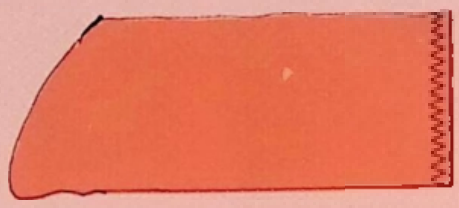
(4) Guide the fold of the fabric into the center cut of the presser foot so that the wide zigzag bite of the stitch comes just slightly to the left of the center cut of the presser foot. The straight or narrow zigzag stitches should be formed on the single thickness of fabric, and the zigzag width bite should catch just barely into the fold of the fabric at the left.

(5) When stitching is completed, remove fabric from machine and turn to right side. Press completed hem.

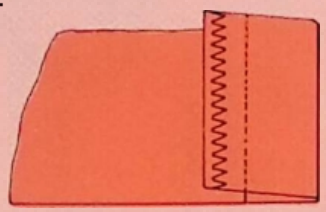
When hemming an A-line skirt, place a machine basting stitch along the raw edge of the hem. At an ironing board, fold up the hem, matching the seams. Ease in the excess fabric by pulling on basting thread. Press with steam, then apply hem tape. Baste or pin hem ½" from taped edge, the continue into step 3.

Pattern: 2 or 3
Length: 2--3
Width: 3--5
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: N

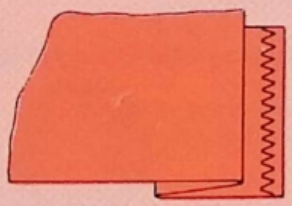
Step 1



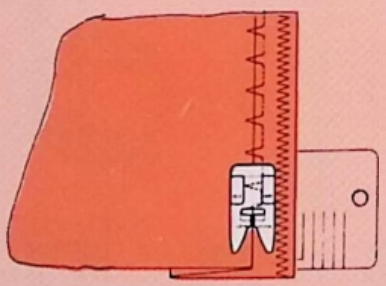
Step 2



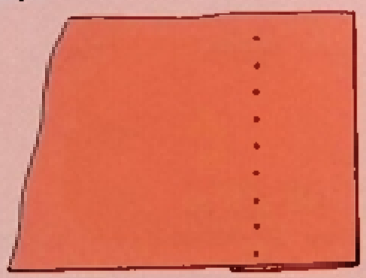
Step 3

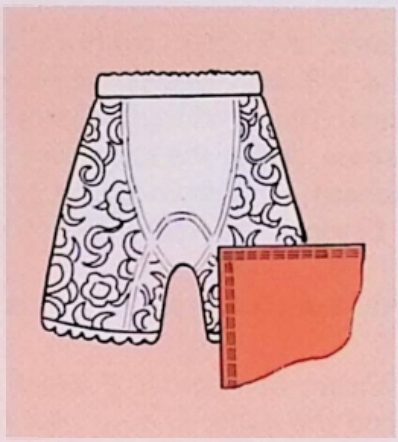


Step 4



Step 5





STRETCH STITCHES:

STRAIGHT STRETCH STITCH

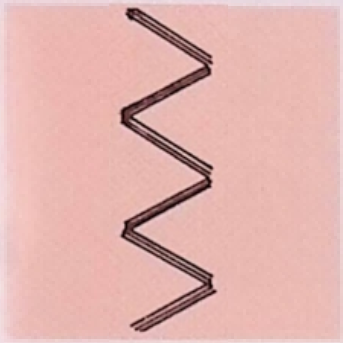
This stitch may be used on knits and wovens in areas of stress as a reinforcement stitch. It is excellent for curved seams such as armholes and crotch seams. For active wear such as ski pants and girdle fabrics which endure a lot of stress in bending and stretching, this stitch may be used for seaming throughout the garment. With stretch stitch control at "STRETCH STITCH" position, sew in same manner as for ordinary sewing.

CAUTION – It is difficult to remove this stitch from fabric. Pre-fit garment before using this stitch.

- **Topstitch Effect**

Because this stitch is heavier than an ordinary straight stitch, it is ideal for topstitching, particularly on knits.

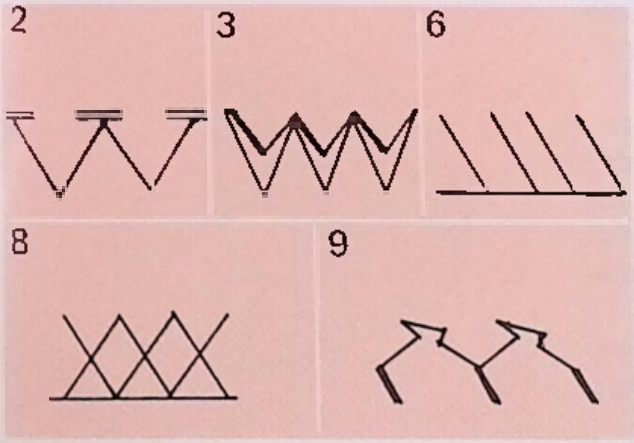
Pattern: 1
Length: 5
Width: M
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: STRETCH



Pattern: 1
Length: 5
Width: 2–5
Feed Dog: Up
Pressure: Full
Foot: All purpose
Stretch Control: STRETCH

RICK-RACK:

This is a most common triple back-and-forth zigzag stitch for decorative uses, with more elasticity than regular zigzag.



STRETCH OVERLOCK, ELASTIC EDGING, STITCH-OVERCAST, OVERLOCK, & FEATHER STITCHES

These stretch stitches are best for seaming and overcast, edge-stitching and decorative effects on both woven and knit fabrics such as lingerie, sweater knits, bathing suit knits, cotton knits, or gauze type fabrics.

Pattern: 2,3,6,8,9
Length: 5
Width: 5
Feed Dog: Up
Pressure: Full
Foot: All Purpose
Stretch Control: STRETCH

APPLICATIONS:

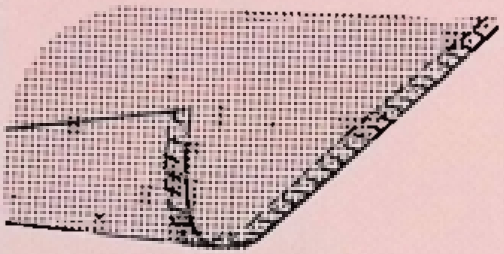
On most knits, 3/16 inch finished seam, such as stretch overlock and other special ultrastretch stitches are more desirable than a 5/8 inch opened seam allowance. These stitches can create a neater, more professional finish, eliminate bulky seams, prevent curling, permit the garment to "give" under stress, and at the same time they cut down on the amount of work involved in making a garment. If ever in doubt as to which of those stitches to use, test them on the particular fabric in question and choose according to their performance.

Its uses are almost unlimited and the more you use your machine the more it will become apparent to you.

Note: The stitch length control should be always at number 5 when stretch stitching, otherwise the machine will be noisy and the material may feed in reverse only or with uneven forward and reverse stitch length.

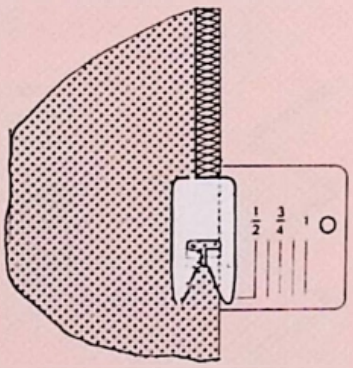
- **Elastic Application**

Fold fabric over the elastic and stitch elastic and fabric at one time, using stretch overlock, elastic edging, or other special stretch stitch. The double layer of fabric next to the elastic should be stitched with the one-side of special stretch seam and the elastic should be caught by another side.



- **Overlock Application**

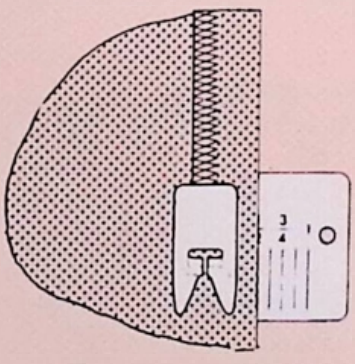
Special stretch stitches are also very usable for overlock stitching on both woven and knit fabrics.

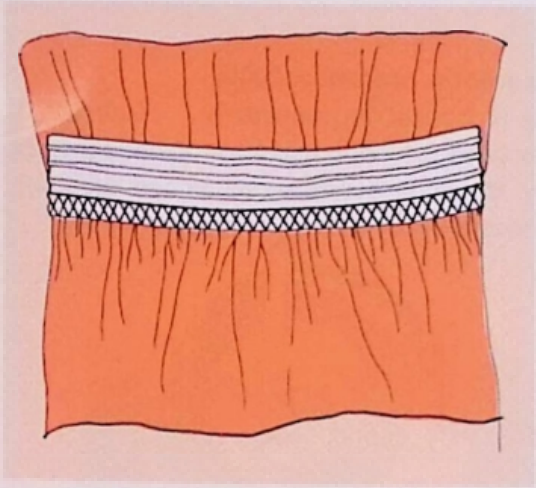


(A) Place the raw edge of the fabric under the presser foot so that as the needle swings to the right, it comes down at the raw edge. This will result in an enclosed seam allowance.

(B) The seam allowances may be trimmed to 1/4 inch either before or after sewing. If trimming before sewing, proceed as above. Otherwise, sew the seam with the raw edge of the fabric on the etched guide line 1/2". (Any time you use the full width of a particular stitch, you should readjust the raw edge of the fabric 1/8 inch to the left.) Afterward, trim the excess fabric near the stitching. This method is actually easier than the overedge method for fabrics that curl.

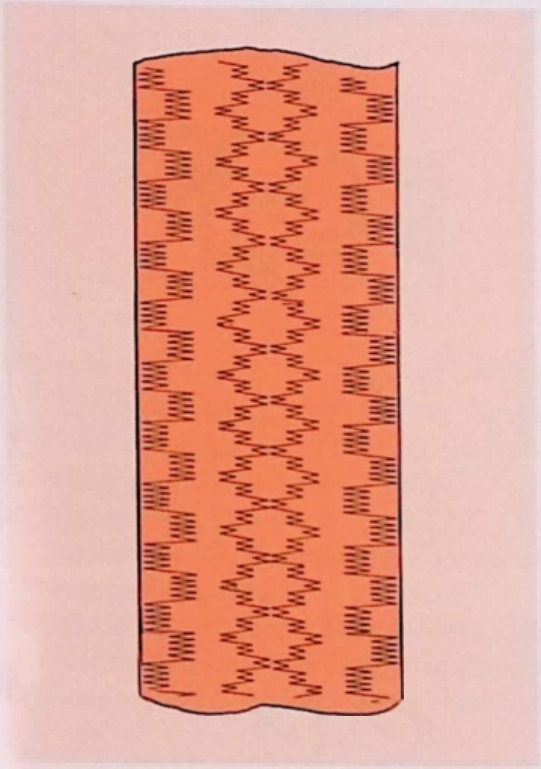
Note: On soft, loose knits, the fabric may seem to wave or ripple. If this occurs, reduce the pressure on fabric.





(C) Applying Elastic

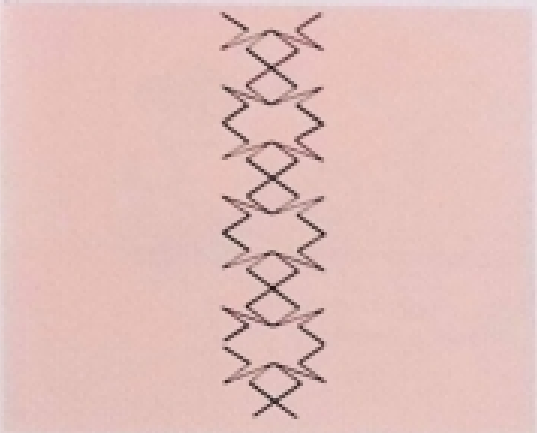
The special stretch stitch give a very finished appearance to elastic application.



DECORATIVE STITCHES

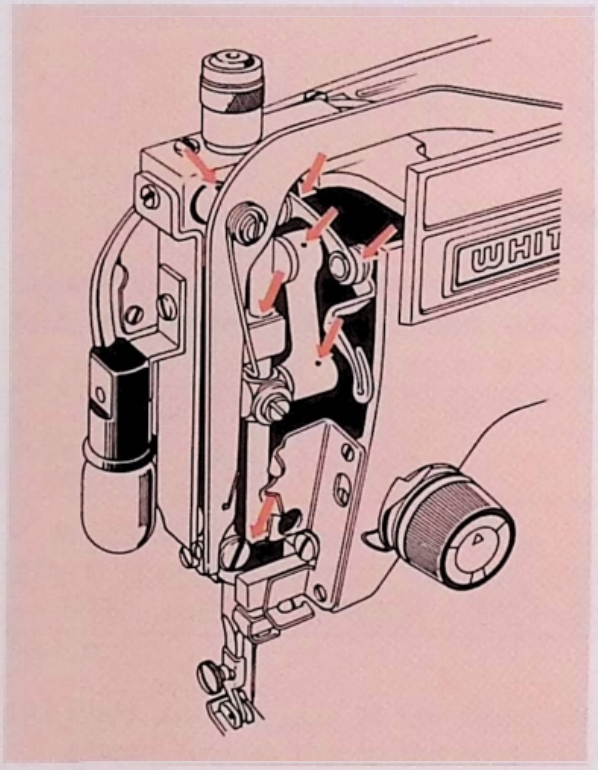
Below-shown stitch are very useful for decorative stitching and edging on both woven and knit fabrics.

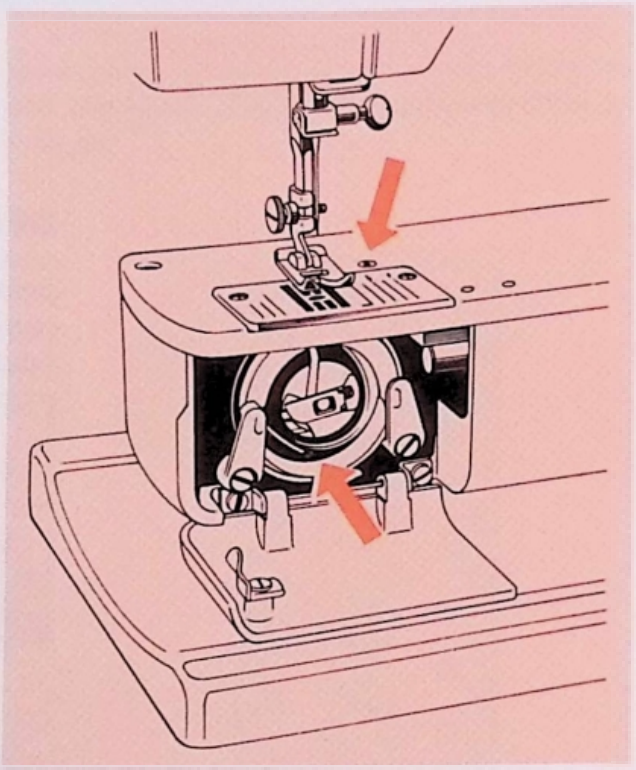
	N		SS	
4.		Scallop		Decorative Stitch
5.		Domino		Crown
7.		Checker		Cross

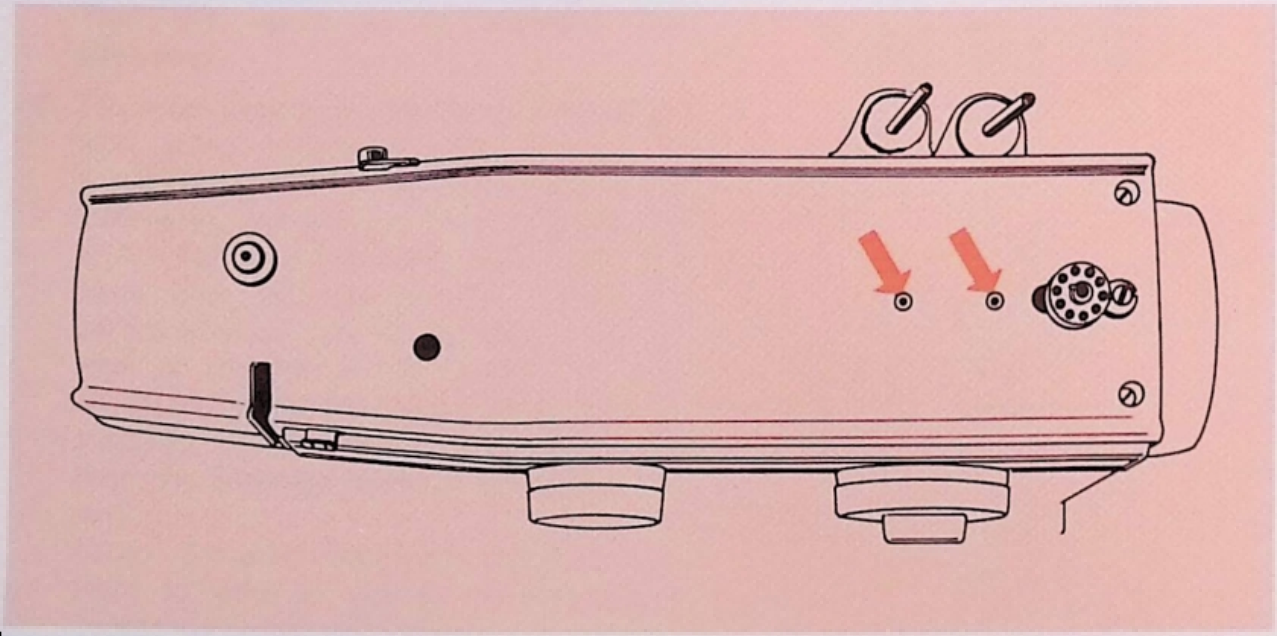


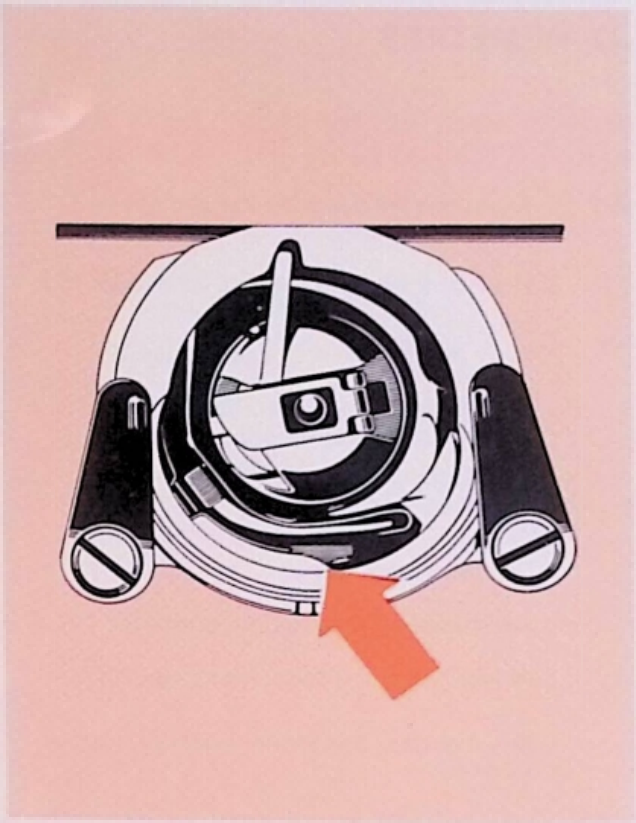
OILING MACHINE

Use only a good sewing machine oil, do not use any common household oils.
Your machine should be oiled occasionally to keep it operating smoothly. How often depends on the amount of sewing you do. Once a month oil your machine thoroughly as indicated by the arrows on illustrations, specifically those point marked in red on your machine.
Place a single drop to avoid over oiling.









CLEANING AND OILING THE SHUTTLE AREA

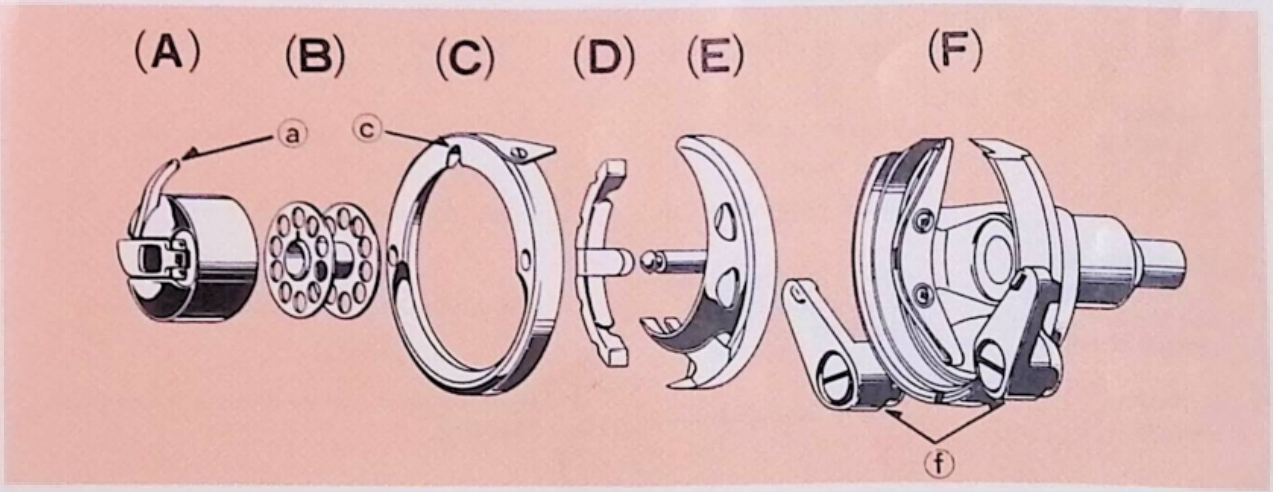
The stitch forming mechanism occasionally becomes clogged with loose threads and lint. This will interfere with the efficient operation of the machine. Cleaning and removal of the lint will safeguard the performance.

To remove the shuttle assembly, proceed as follows:

1. Turn hand wheel until the needle reaches its highest position. Tilt head back on its hinges.
2. Remove bobbin case (A).
3. Turn the two shuttle race cover clamps (f) outward and remove the shuttle race cover (C) and the shuttle body (E) and the lint cleaner (D).
4. Clean the shuttle race, the shuttle, and shuttle race cover by removing all threads, lint, etc.

When the cleaning has been completed, proceed as follows to replace the shuttle assembly:

1. Turn hand wheel until the needle reaches its highest position.
2. Place lint cleaner (D) to shuttle driver and shuttle body (E) in race (F) against shuttle driver and adjust into position.
3. Replace shuttle race cover (C), fitting pin at lower edge into notch, and lock into position with shuttle race cover clamps (f), making certain the clamps have been snapped securely into position.
4. Put bobbin (B) into bobbin case (A).
5. Put the bobbin case into the shuttle, fitting tongue (a) into notch (c) of race cover (C).
6. Place a single drop of oil on shuttle body as indicated by arrow on illustration.

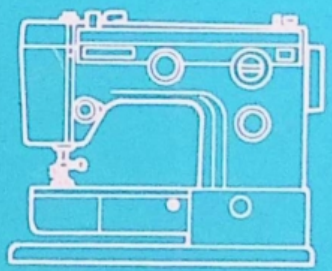


PROBLEM AND REMEDIES

Trouble	Probable Cause	Remedies
If Machine Binds	Thread or lint in raceway.	Clean and oil machine the shuttle area. (See page 39.)
Skipping Stitches	Bent needle.	Replace with new needle. (See page 10.)
	Needle placed incorrectly in clamp.	Place needle correctly. (See page 10.)
	Too fine a needle for thread being used.	Replace needle or thread to conform each other. (See page 9.)
	Too stretchy fabric.	Place a paper beneath fabric, or use Ball Point needle.
Irregular Stitches	Upper thread tension too loose.	Tighten upper tension.
	Improper threading.	See threading instruction, page 13.
	Bobbin not wound evenly.	Adjust bobbin winder. (See page 12)
Uneven Stitches	Pulling or holding material.	Avoid pulling or holding material, just guide it.
	Not enough tension on upper thread.	Increase tension.
	Poor quality thread.	Try different thread.
	Needle too fine for thread being used.	See needle and thread chart, page 9.
Upper Thread Breaking	Improperly threaded.	Refer to threading instructions, see page 13, and rethread machine.
	Too much tension.	Loosen upper thread tension. (See page 18.)
	Starting with take-up in incorrect position.	Always start sewing with take-up lever in highest position.
	Improper setting of needle.	Refer to needle setting instruction, see page 10.
	Bent or eye of needle too sharp.	Try a new needle.
	Bent or blunt needle.	Discard all blunt or bent needles and replace with new.
Material Puckering	Tensions too tight.	See tension adjustment, page 18.
	Dull needle.	Change needle.
	Stitch length too long.	Reduce stitch length.
Machine noisy & material will not feed in stretch stitching.	Stitch length control is set at other than Number 5.	Set stitch length control at Number 5
Improper feeding	Lint in feed dog.	Remove needle plate and clean lint from feed dog.

If your machine skips stitches only on certain fabrics, try all of the above procedures before calling a repairman.

Check the needle plate area, if there are scratches and marks around the needle hole opening, your machine is not being cleaned properly. Always remove the needle plate and clean the feed dogs periodically. Improper and lack of cleaning will cause an accumulation of lint which hampers the feeding mechanism, this in turn will cause the operator to impatiently pull or push the cloth causing the needle to bend and strike the plate, foot or hook, causing a slip in the timing mechanism. Continuous striking will cause defects making it necessary to call a serviceman.



WHITE

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